

Fig. 1

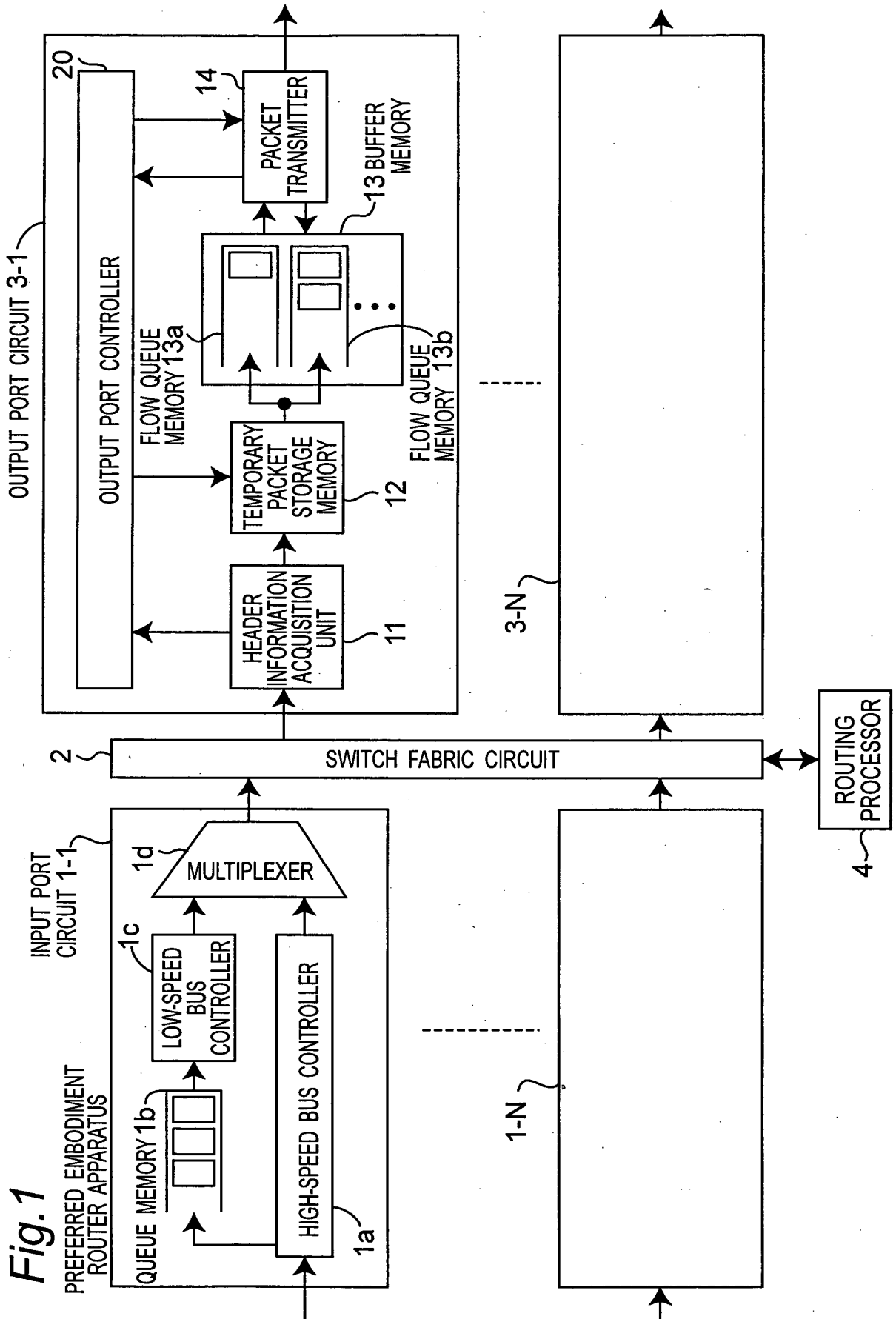


Fig. 2

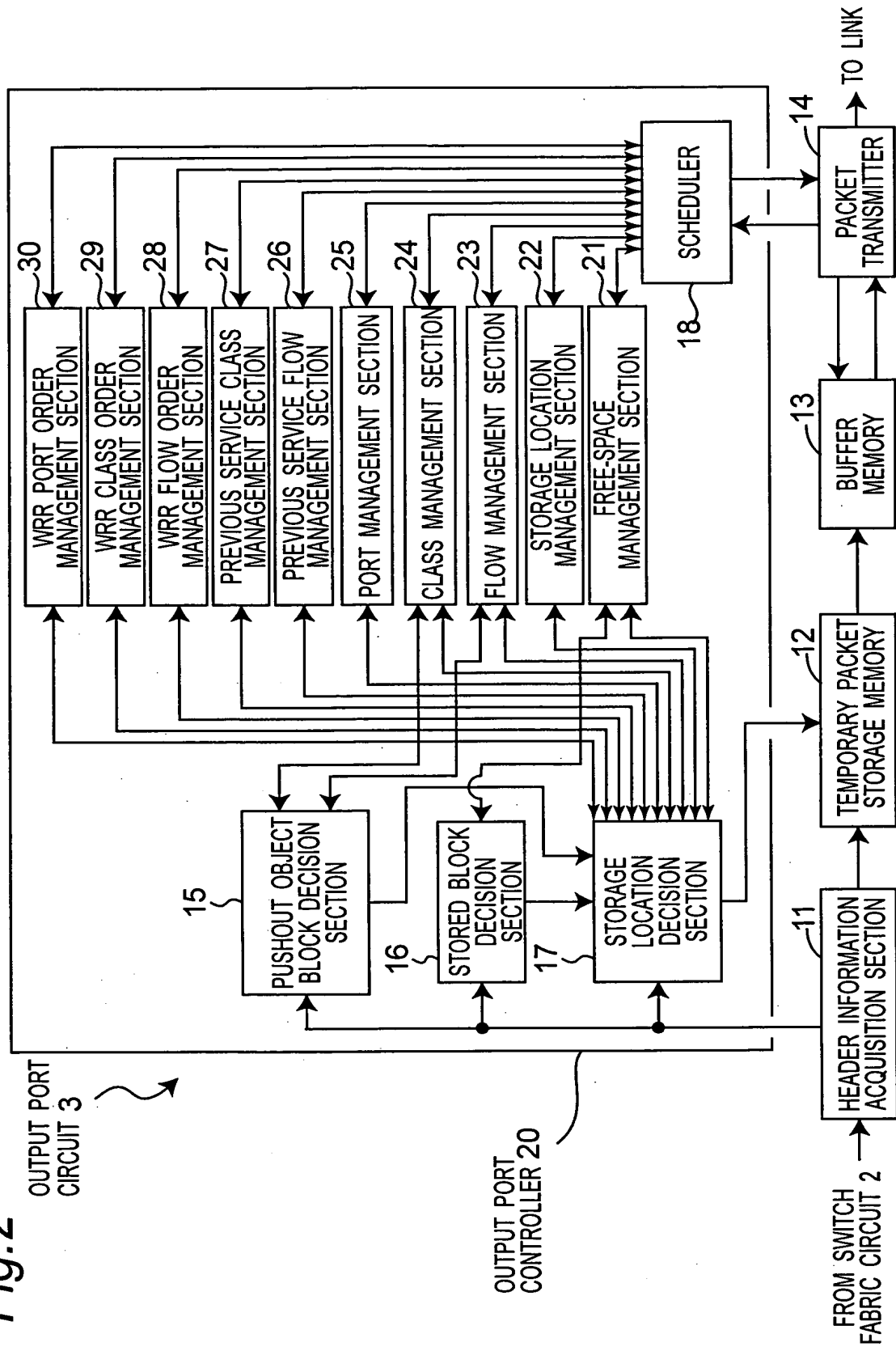


Fig. 3A

ARRIVED PACKET

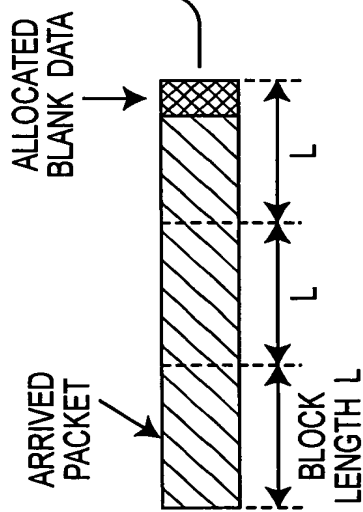


Fig. 3B

MEMORY SPACE OF
BUFFER MEMORY 13

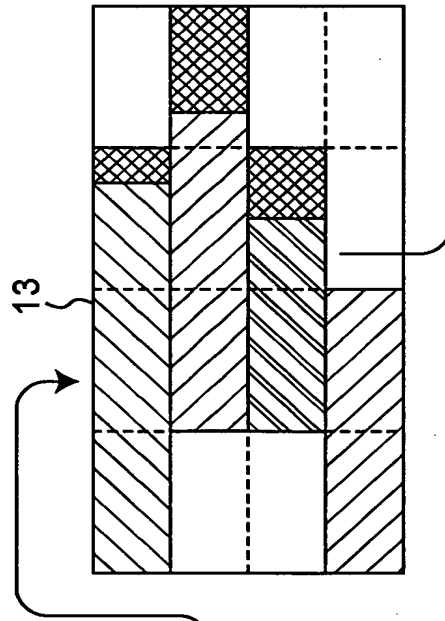


Fig. 3C

TRANSMITTED PACKET

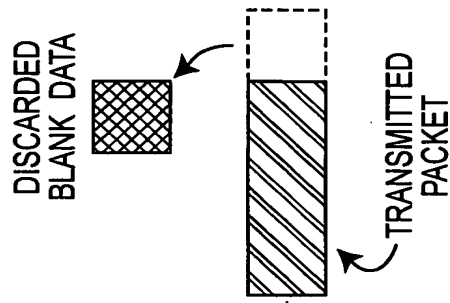


Fig.4

FREE-SPACE MANAGEMENT TABLE T1

BLOCK NUMBER	NEXT BLOCK NUMBER
1	-1
2	3
3	5
4	-1

Fig.5

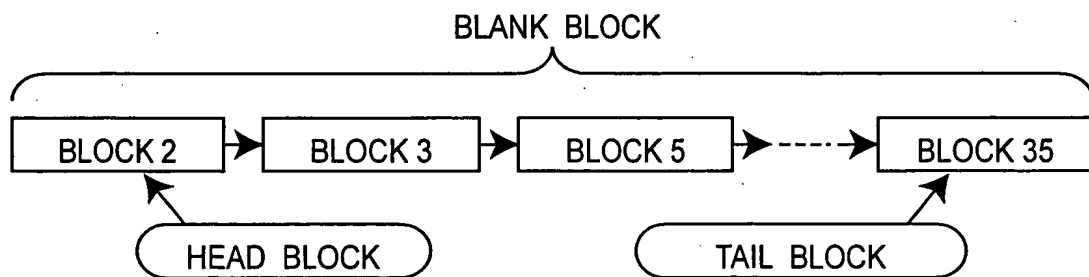


Fig.6

STORAGE LOCATION MANAGEMENT TABLE T2

BLOCK NUMBER	NEXT BLOCK NUMBER
1	3
2	5
3	8
4	-1
⋮	⋮
8	-1

Fig.7

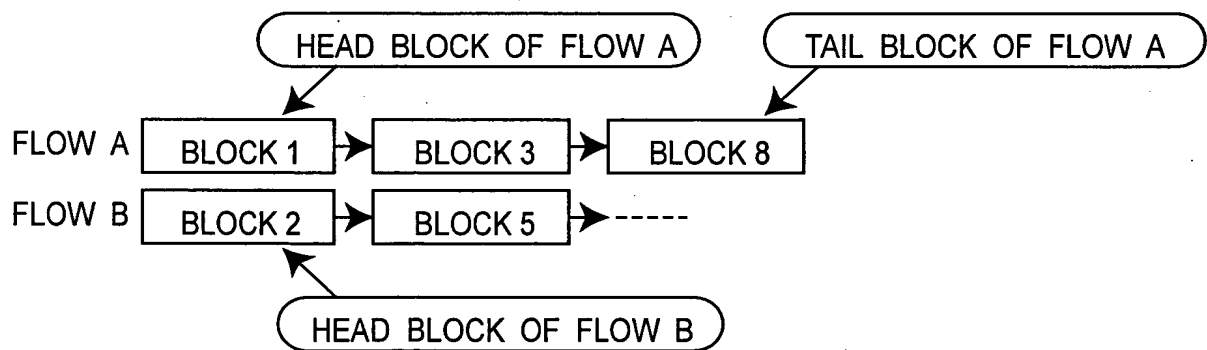


Fig.8

FLOW MANAGEMENT TABLE T3 FOR FLOWS
BELONGING TO BANDWIDTH-GUARANTEED CLASS

FLOW ID	BASIC VOLUME	USED VOLUME	HEAD BLOCK NUMBER	TAIL BLOCK NUMBER	PRIORITY
1	16	20	3	38	2
2	8	4	19	8	4
3	16	10	11	24	1

Fig.9

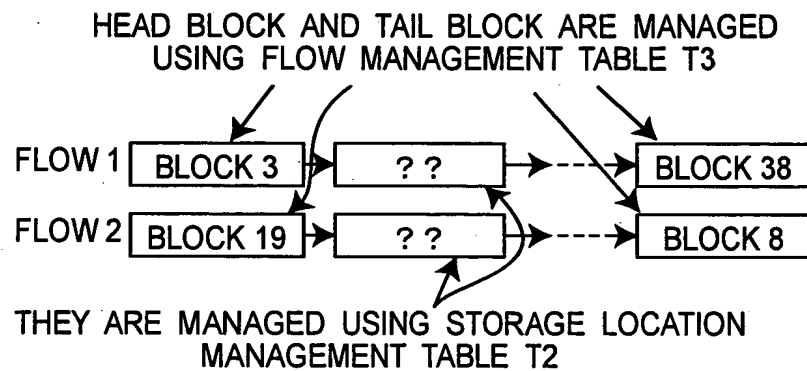


Fig.10

CLASS MANAGEMENT TABLE T4

FLOW ID	BASIC VOLUME	USED VOLUME	NUMBER OF FLOWS	PRIORITY
0	32	28	4	10
1	16	20	6	12
2	10	25	10	10

Fig.11

PORT MANAGEMENT TABLE T5

FLOW ID	BASIC VOLUME	USED VOLUME	NUMBER OF CLASSES	PRIORITY
0	40	31	2	4
1	30	20	3	3
2	20	25	1	2

Fig.12

WRR FLOW ORDER MANAGEMENT TABLE T6

FLOW ID	NEXT SERVICE FLOW ID
1	3
2	5
3	4
4	1

Fig.13

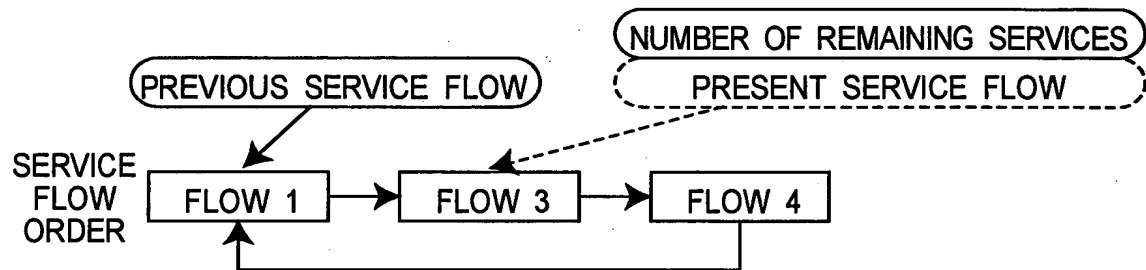


Fig.14

PREVIOUS SERVICE FLOW MANAGEMENT TABLE T7

CLASS ID	PREVIOUS SERVICE FLOW ID	NUMBER OF SERVICES HAVING REMAINING FLOWS
0	3	2
1	5	3
2	8	6

Fig.15A

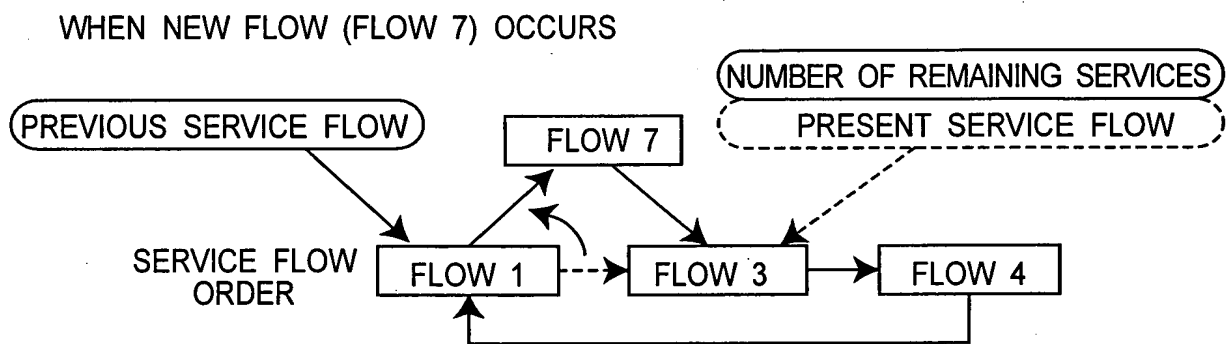


Fig.15B

DATA UPDATE PROCESSING FOR INSERTING
NEW FLOW INTO FLOW NEXT TO PREVIOUS SERVICE
FLOW AND CHANGING PREVIOUS SERVICE FLOW ID TO 7

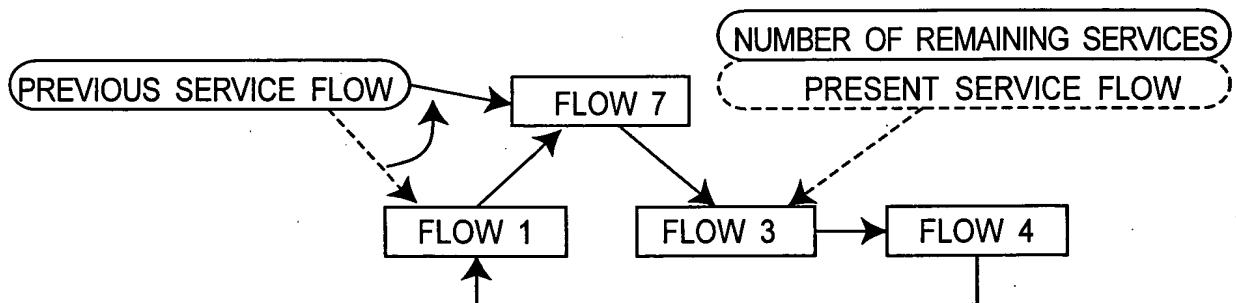


Fig. 16

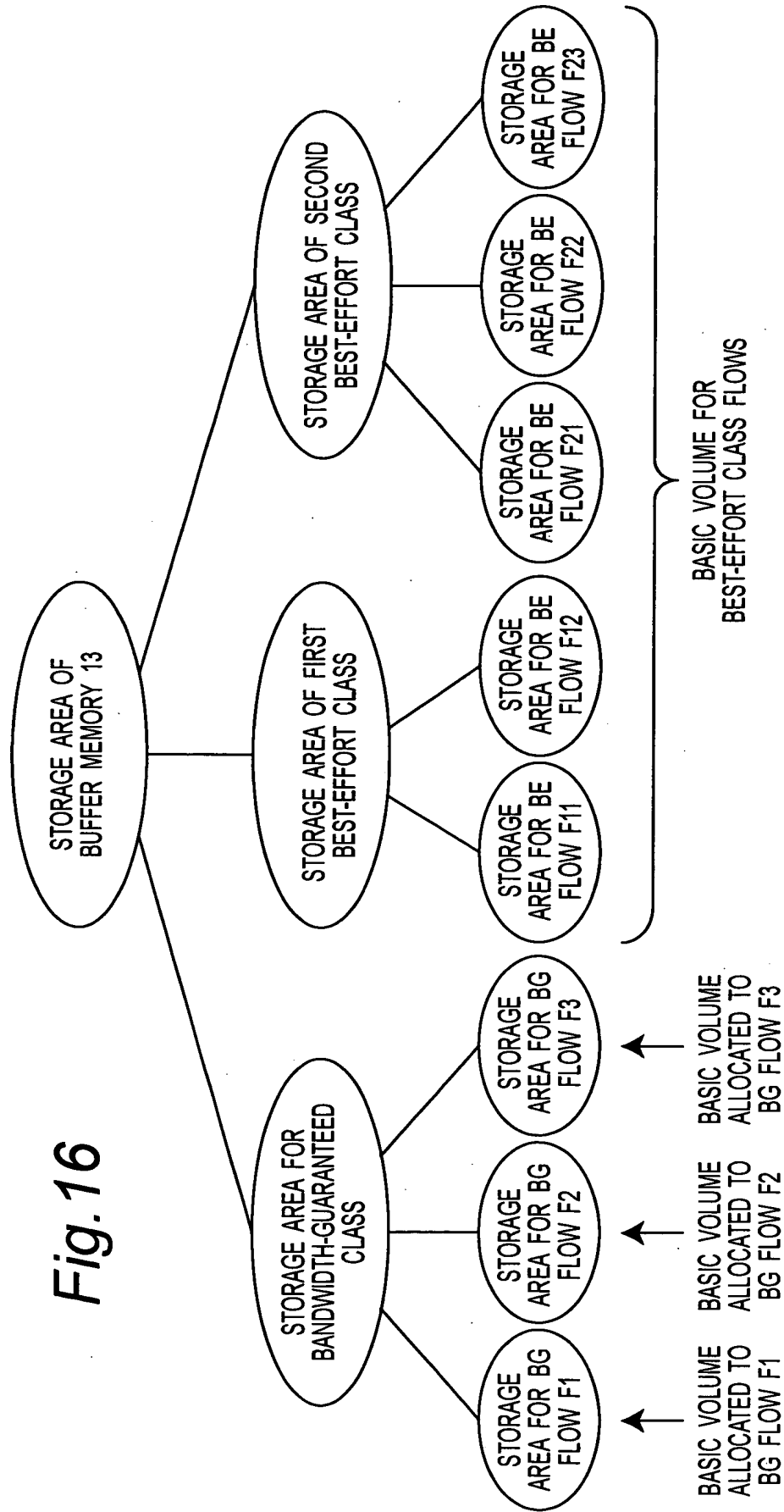


Fig.17

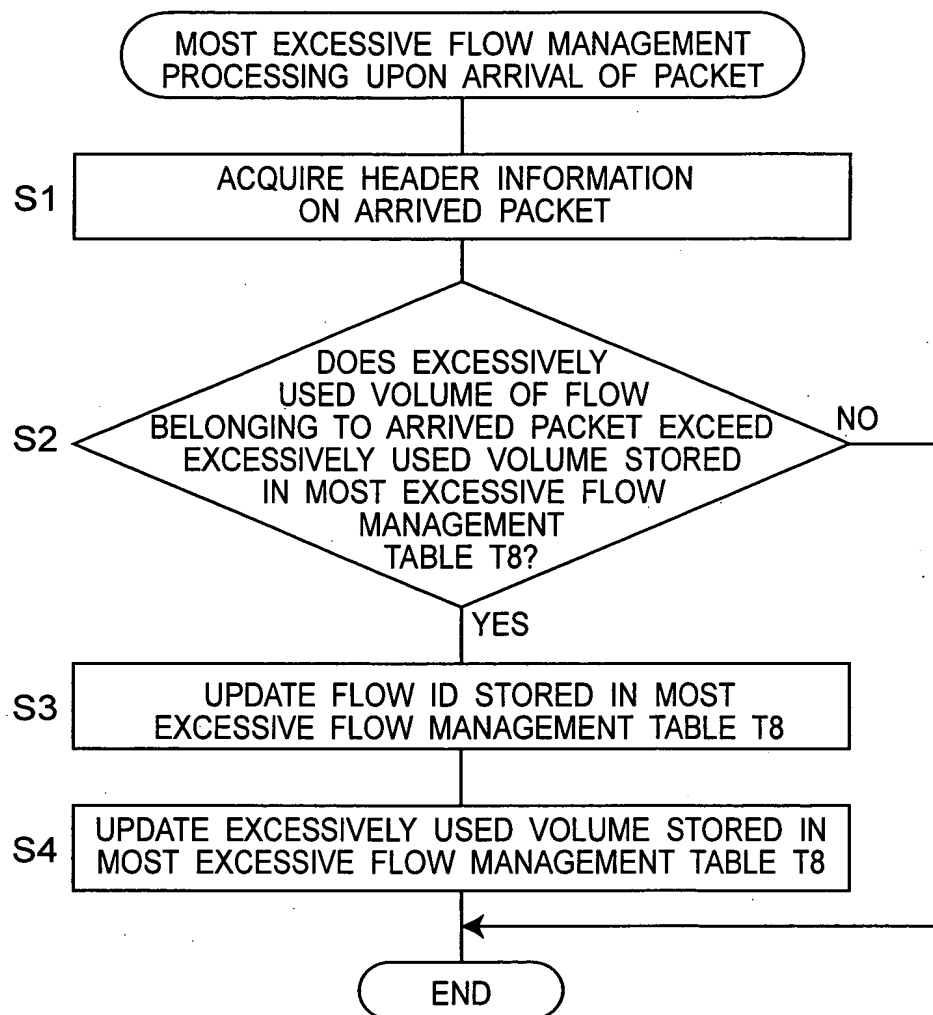


Fig.18

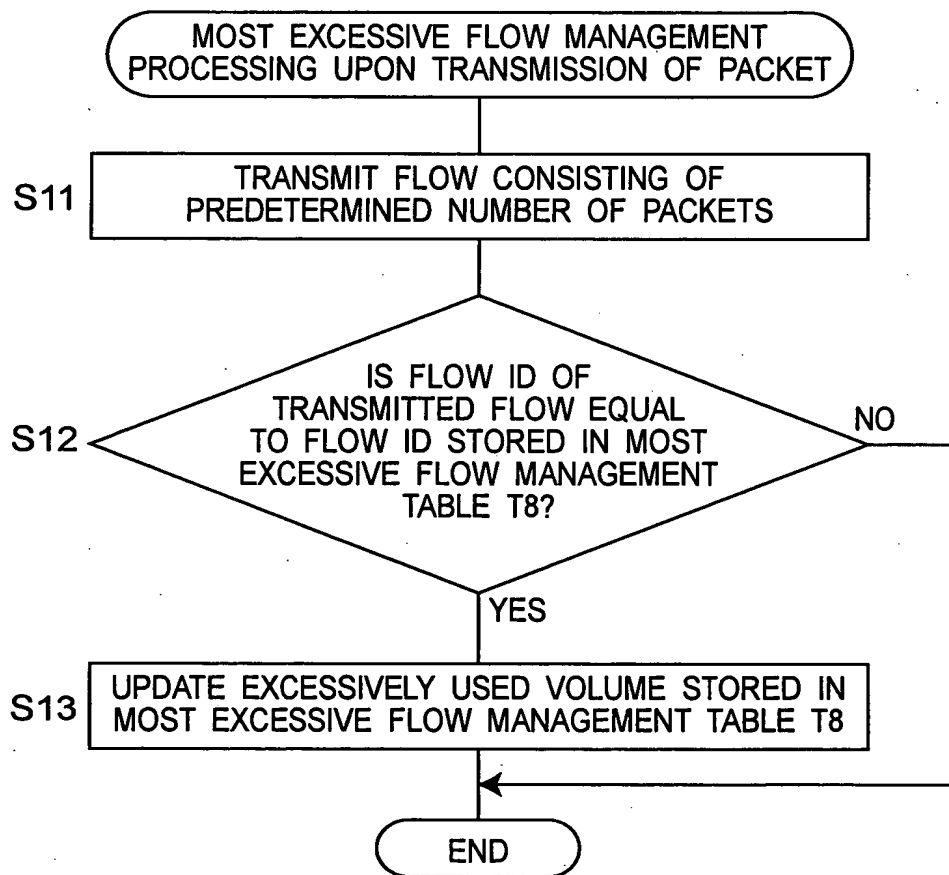


Fig.19A

ONE EXAMPLE OF MOST
EXCESSIVE FLOW MANAGEMENT

INITIAL STATE

(a1) MOST EXCESSIVE FLOW MANAGEMENT TABLE T8	
FLOW ID	EXCESSIVELY USED VOLUME
1	12

(a2) PRESENT STATE (CALCULATED VALUE)	
FLOW ID	EXCESSIVELY USED VOLUME
1	12
2	0
3	11

Fig.19B

WHEN FLOW 3 HAVING
PACKET SIZE OF 2 ARRIVES

(b1) MOST EXCESSIVE FLOW MANAGEMENT TABLE T8	
FLOW ID	EXCESSIVELY USED VOLUME
3	13

(b2) PRESENT STATE (CALCULATED VALUE)	
FLOW ID	EXCESSIVELY USED VOLUME
1	12
2	0
3	13

Fig.19C

WHEN FLOW 3 HAVING
PACKET SIZE OF 2 ARRIVES

(c1) MOST EXCESSIVE FLOW MANAGEMENT TABLE T8	
FLOW ID	EXCESSIVELY USED VOLUME
3	11

(c2) PRESENT STATE (CALCULATED VALUE)	
FLOW ID	EXCESSIVELY USED VOLUME
1	12
2	0
3	11

Fig.19D

WHEN FLOW 1 HAVING
PACKET SIZE OF 2 ARRIVES

(d1) MOST EXCESSIVE FLOW MANAGEMENT TABLE T8	
FLOW ID	EXCESSIVELY USED VOLUME
1	14

(d2) PRESENT STATE (CALCULATED VALUE)	
FLOW ID	EXCESSIVELY USED VOLUME
1	14
2	0
3	11

Fig.20

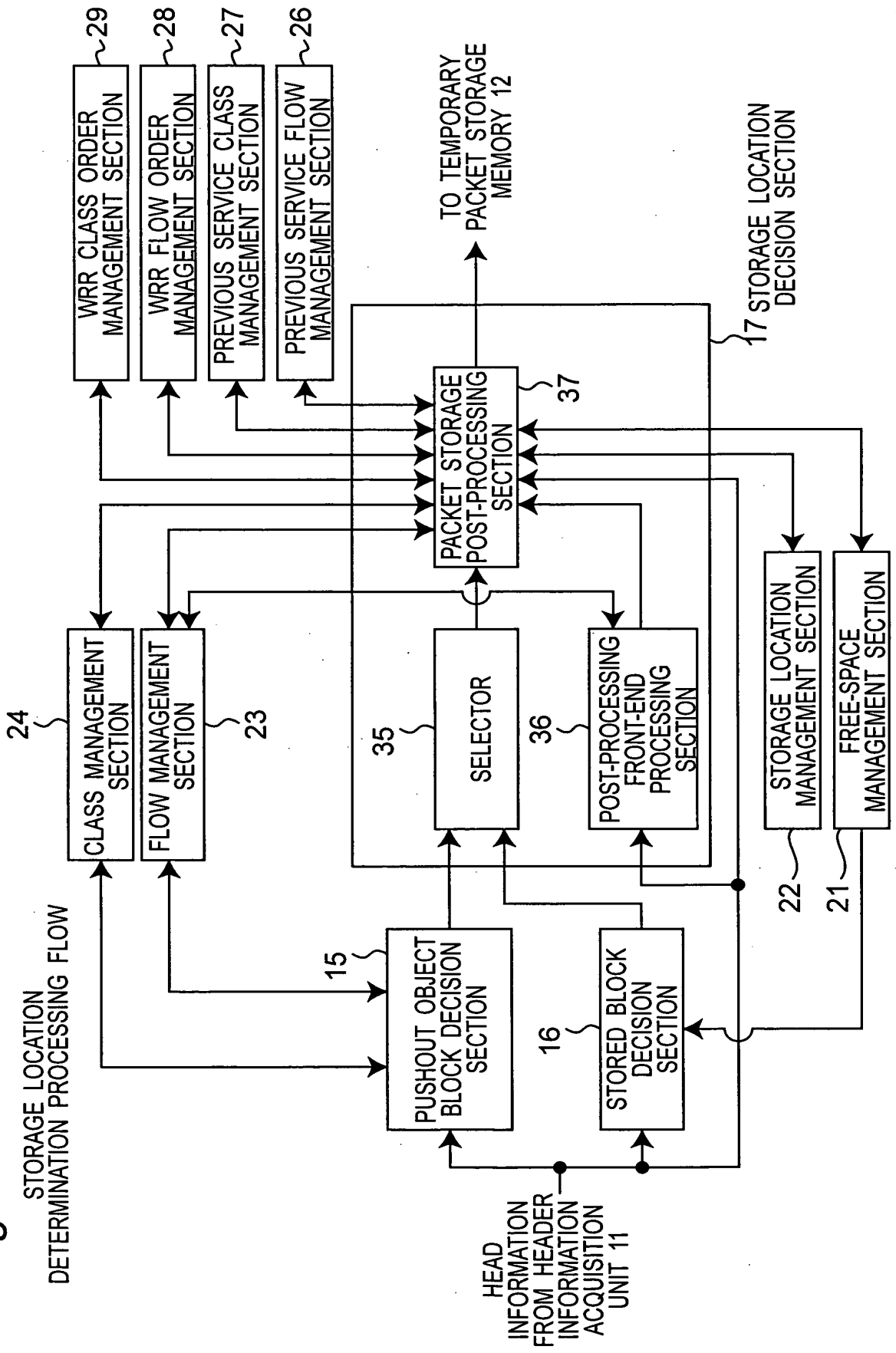


Fig.21

PACKAGE STORAGE POST-PROCESSING SECTION 37

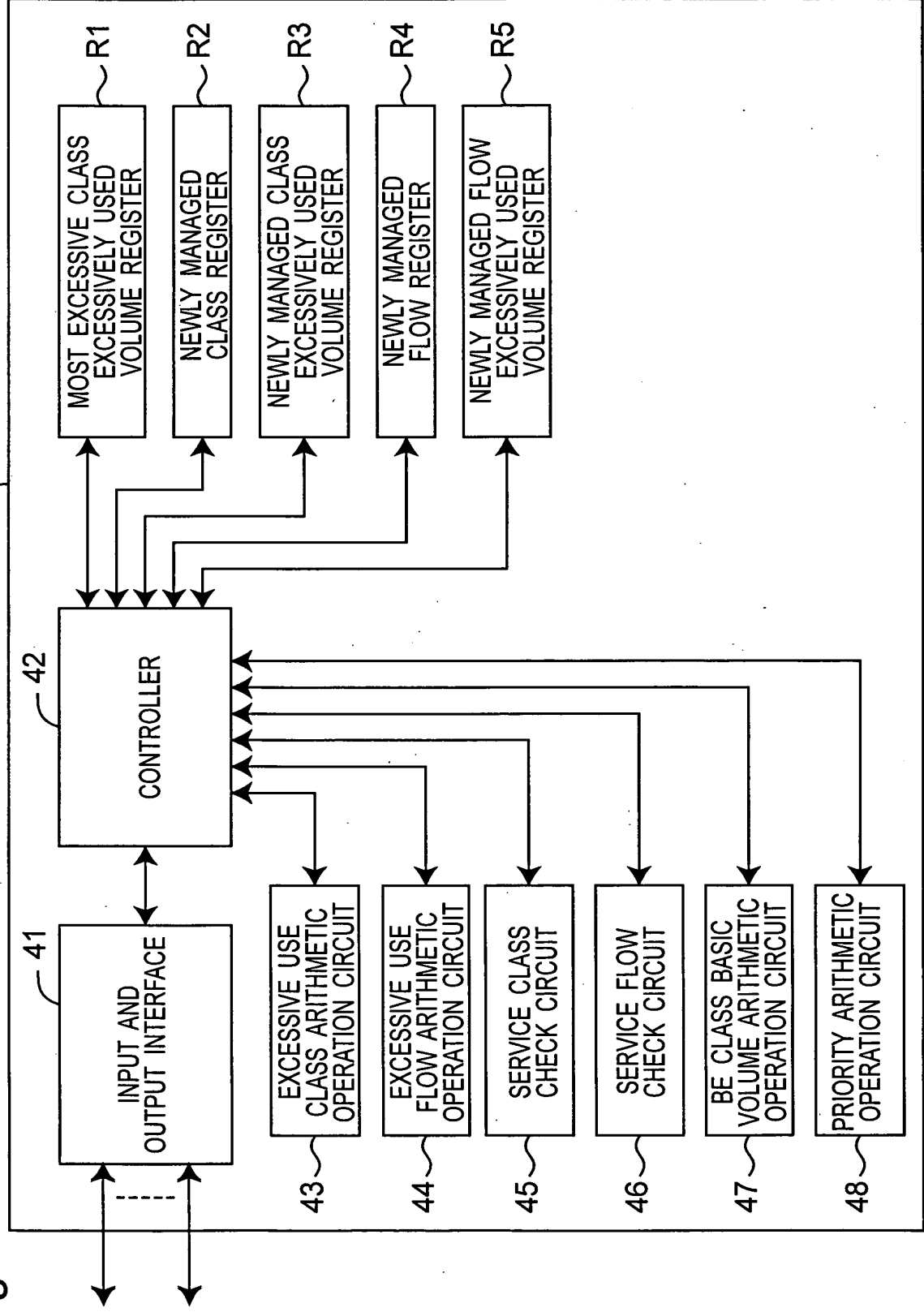


Fig.22

TRANSMITTED PACKET
DETERMINATION PROCESSING FLOW

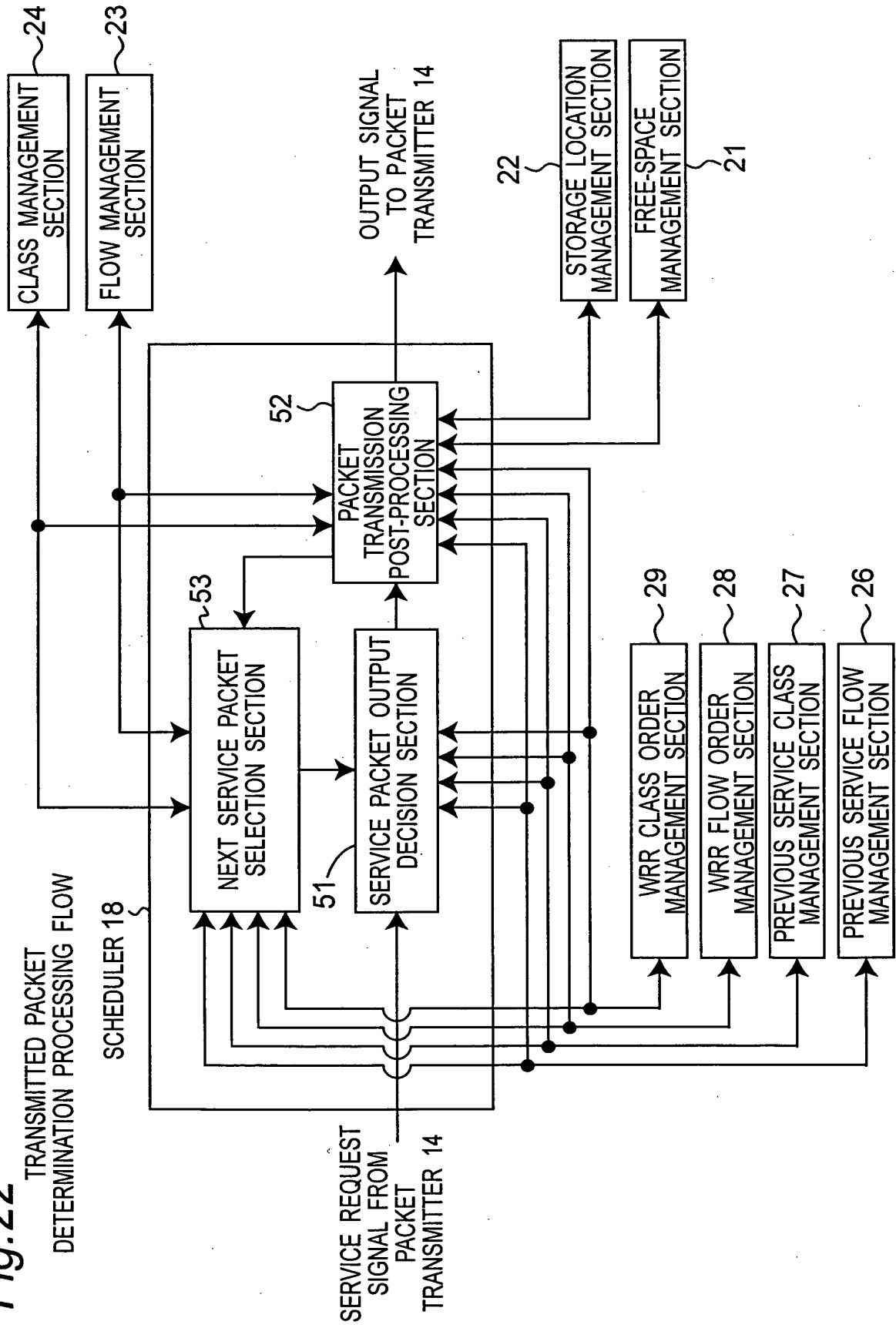


Fig. 23

PACKET TRANSMISSION POST-PROCESSING SECTION 52

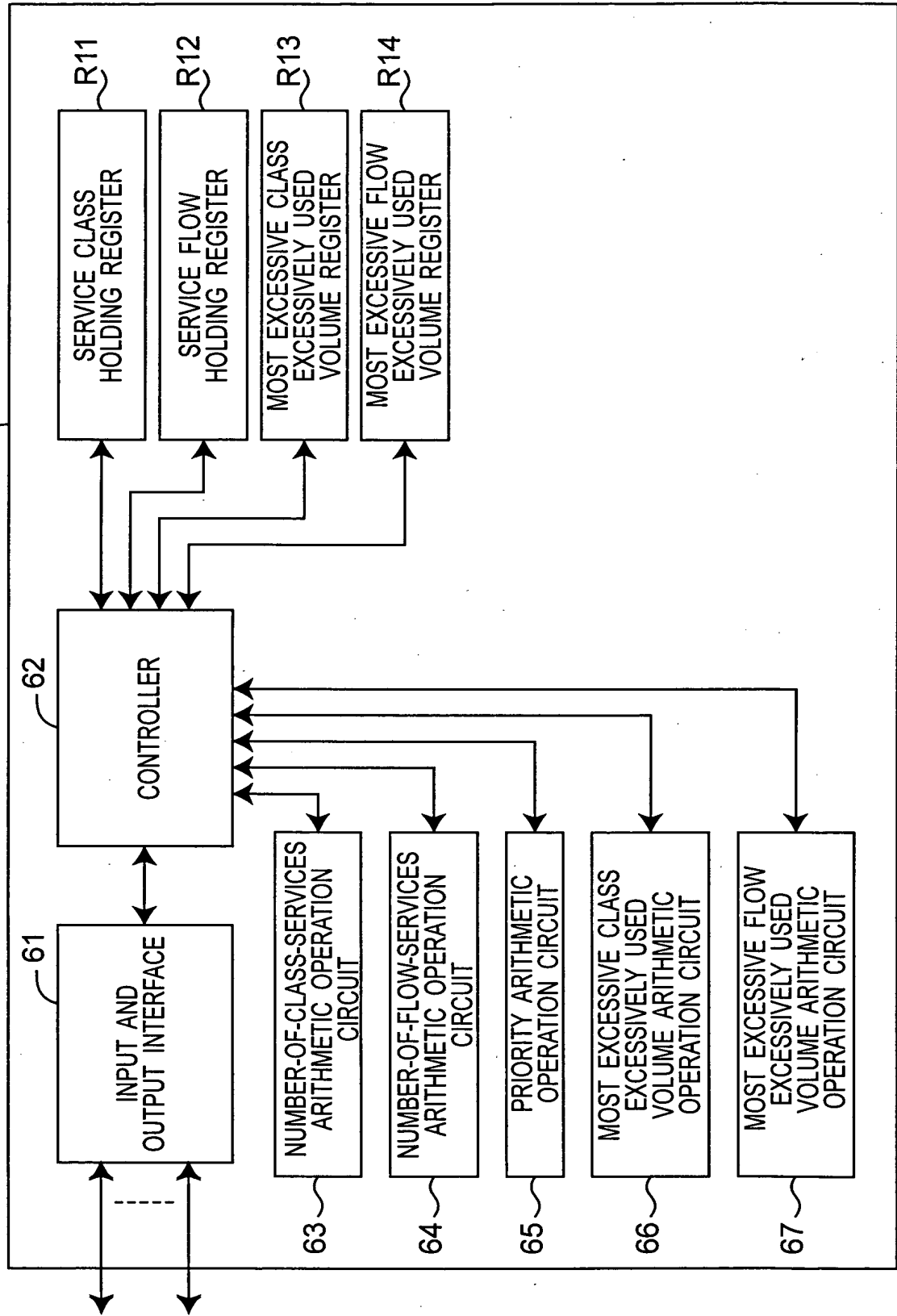


Fig.24

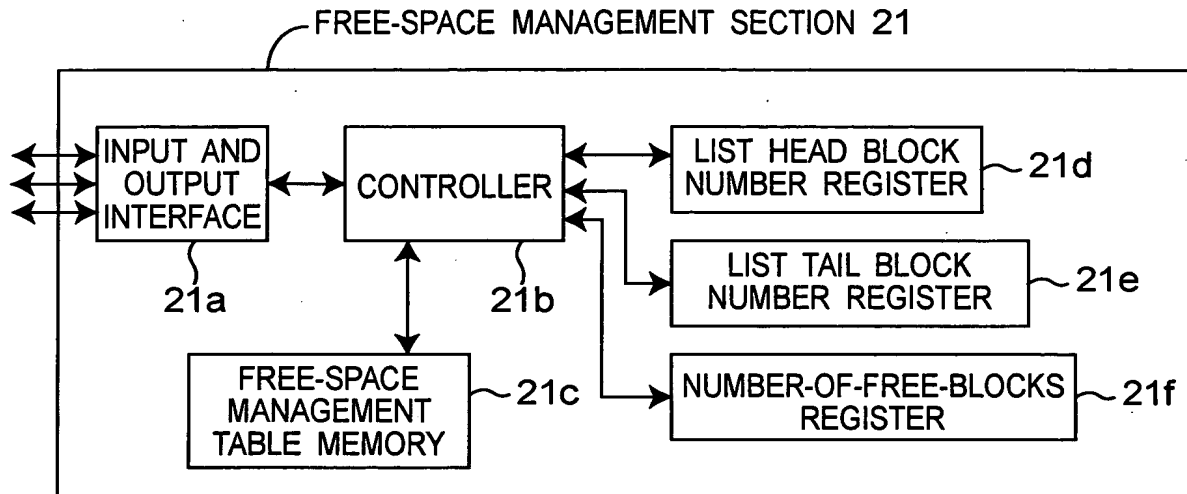


Fig.25A

BLOCK NUMBER	NEXT BLOCK NUMBER	21c
0	-1	
1	2	
2	3	
⋮	⋮	
2F-2	427	

Fig.25B

LIST HEAD BLOCK NUMBER 21d
1

Fig.25C

LIST TAIL BLOCK NUMBER 21e
53

Fig.25D

NUMBER OF FREE BLOCKS 21f
148

Fig.26

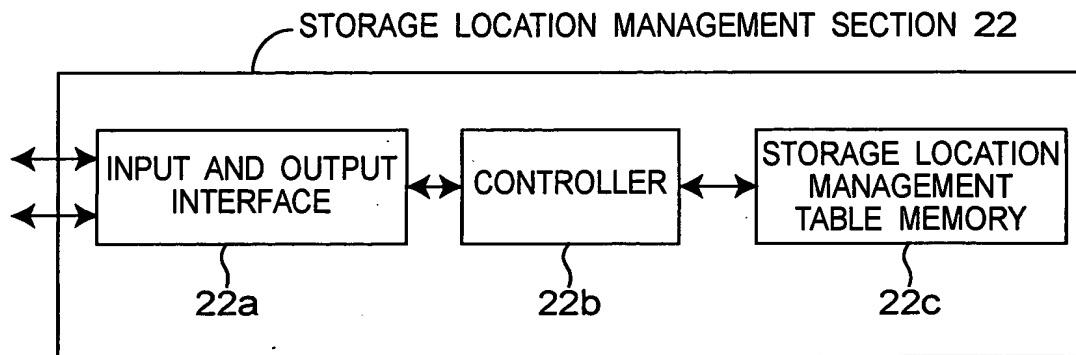


Fig.27

BLOCK NUMBER	NEXT BLOCK NUMBER	22c
0	1	
1	6	
2	13	
⋮	⋮	
2^F-2	-1	

Fig.28

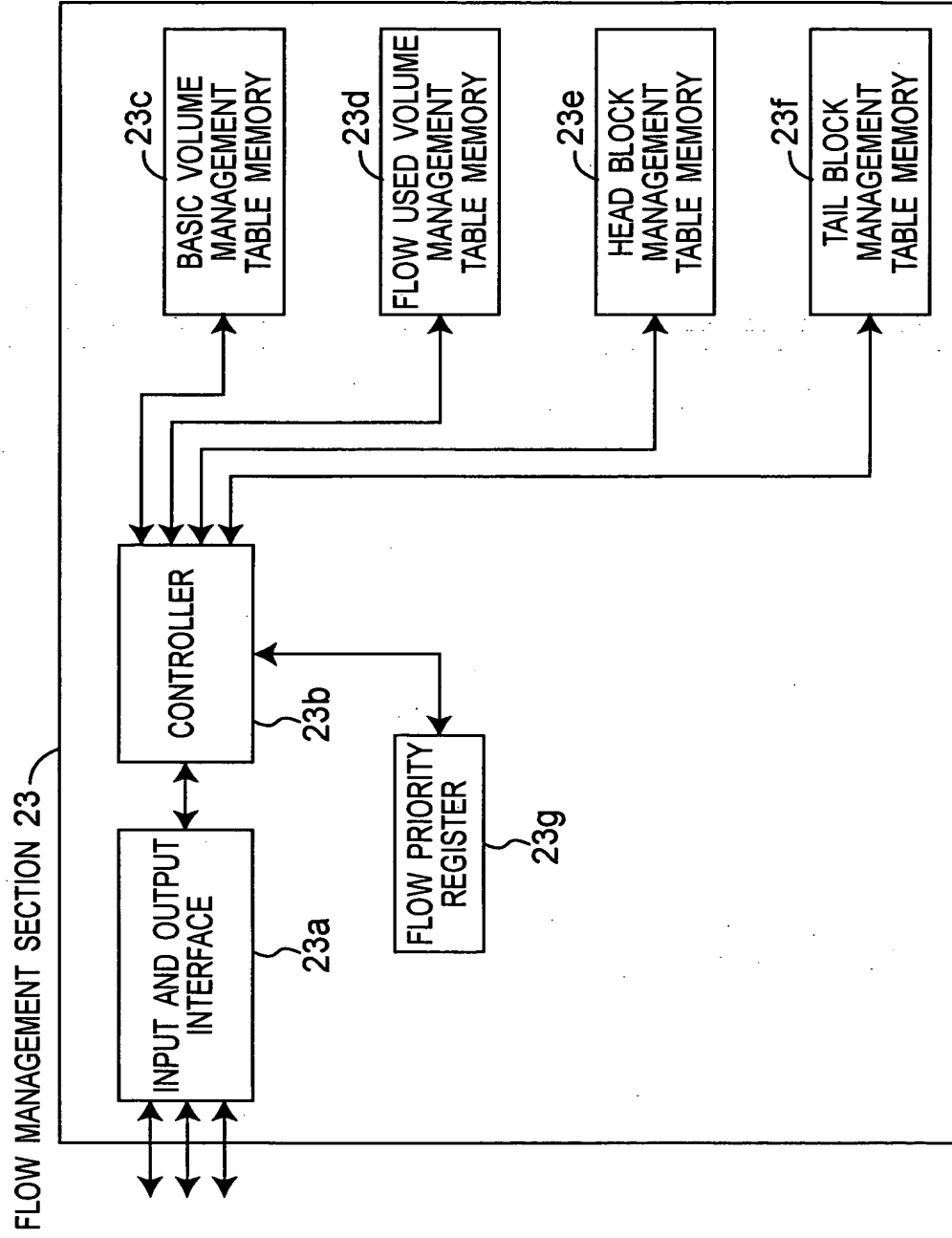


Fig. 29A

FLOW ID	BASIC VOLUME	23c
0	13	
1	0	
2	20	
⋮	⋮	
2^F-2	0	

Fig. 29B

FLOW ID	USED VOLUME	23d
0	18	
1	9	
2	5	
⋮	⋮	
2^F-2	0	

Fig. 29C

FLOW ID	HEAD BLOCK NUMBER	23e
0	0	
1	19	
2	23	
⋮	⋮	
2^F-2	-1	

Fig. 29D

FLOW ID	TAIL BLOCK NUMBER	23f
0	21	
1	7	
2	27	
⋮	⋮	
2^F-2	-1	

Fig. 30

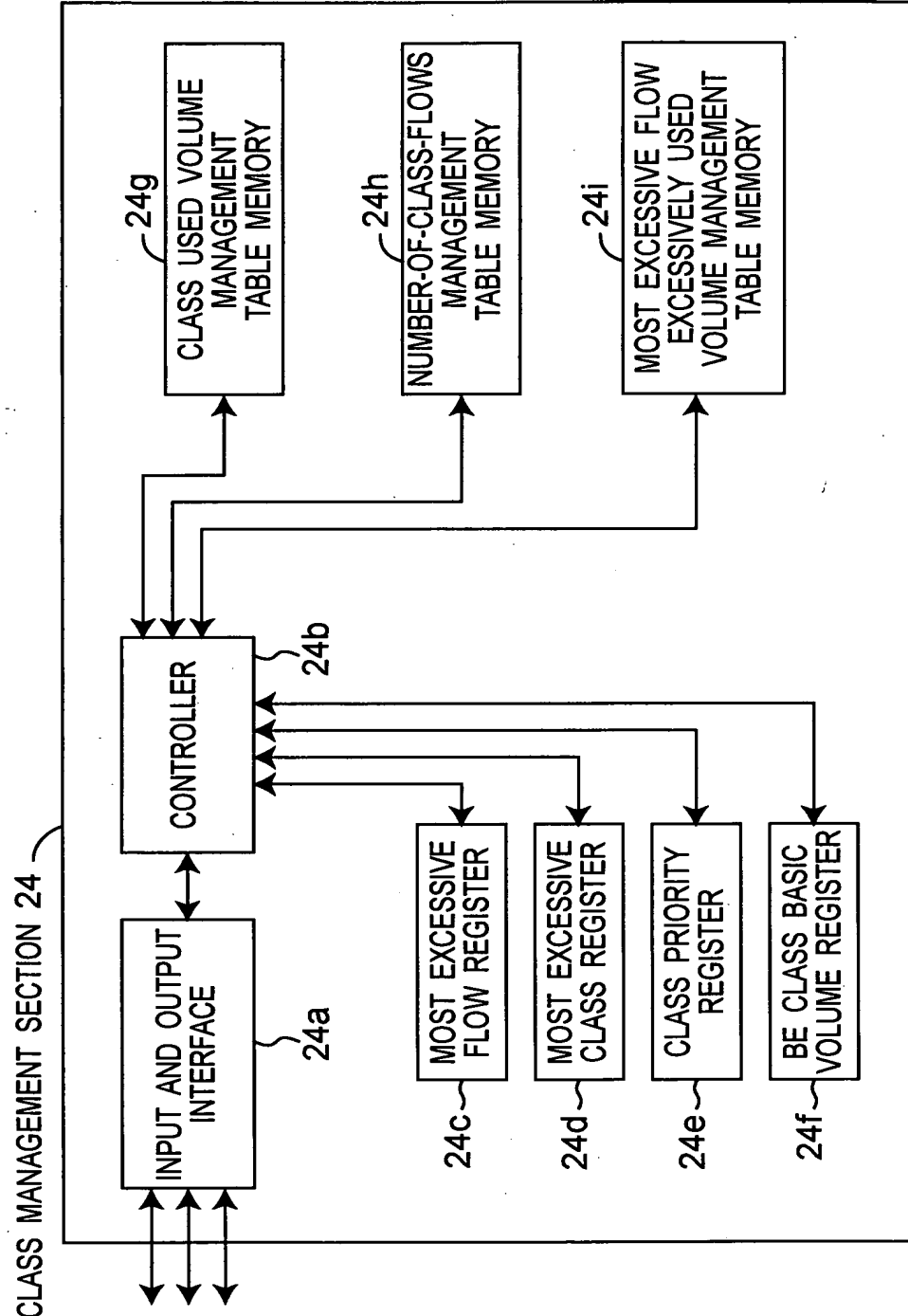


Fig.31A

CLASS ID	USED VOLUME	24g
0	32	
1	24	
2	48	
⋮	⋮	⋮
2 ^C -2	12	

Fig.31B

CLASS ID	NUMBER OF FLOWS	24h
0	4	
1	8	
2	10	
⋮	⋮	⋮
2 ^C -2	2	

Fig.31C

CLASS ID	EXCESSIVELY USED VOLUME	24i
0	0	
1	18	
2	3	
⋮	⋮	⋮
2 ^C -2	0	

Fig.32

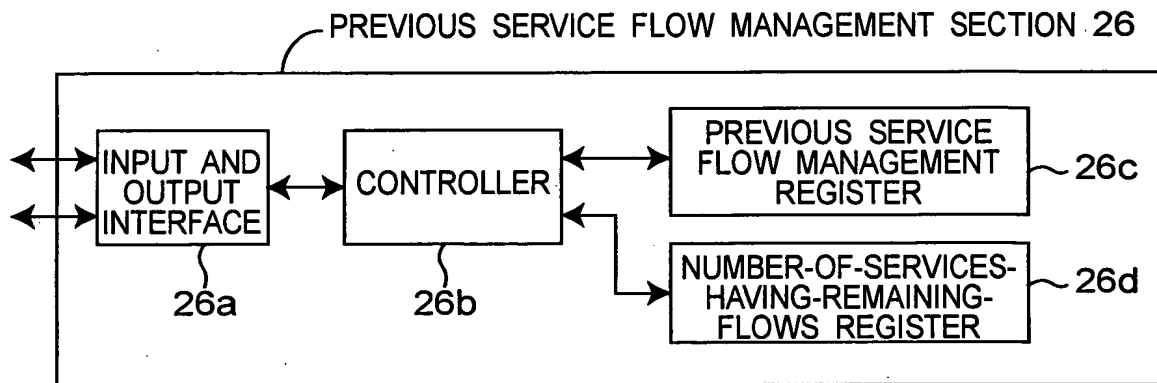


Fig.33

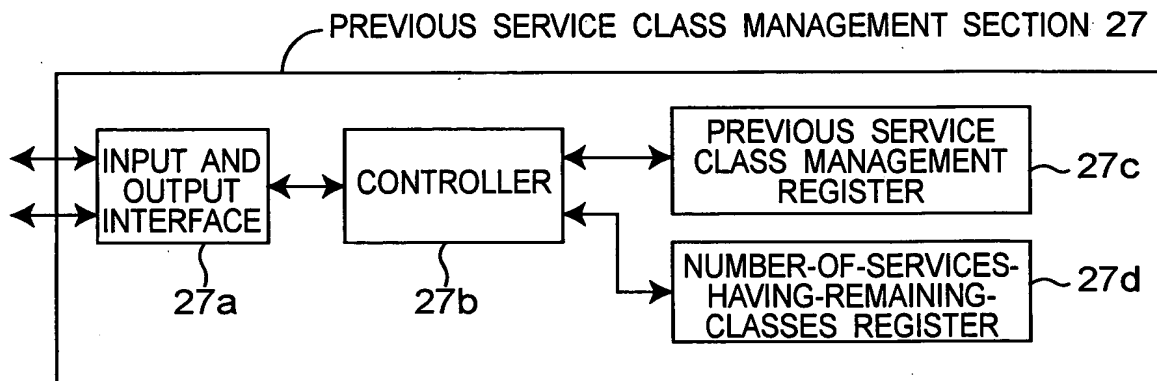


Fig.34

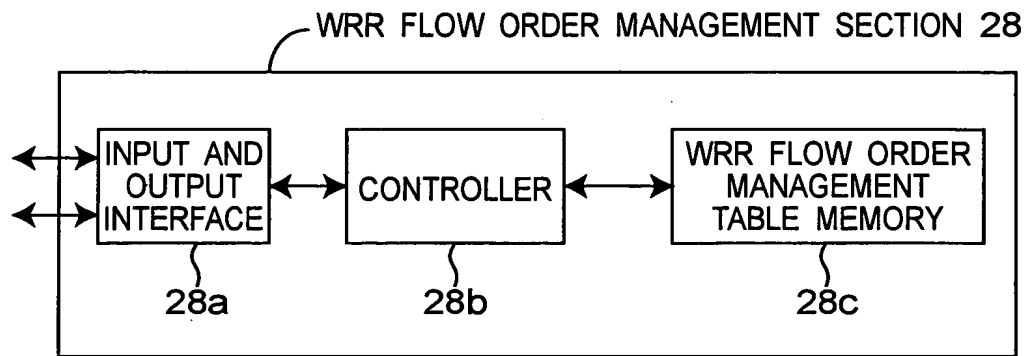


Fig.35

FLOW ID	NEXT SERVICE FLOW ID	28c
0	1	
1	5	
2	3	
≈ ∴ ≈	≈ ∴ ≈	≈
5	0	
≈ ∴ ≈	≈ ∴ ≈	≈
2 ^F -2	-1	

Fig.36

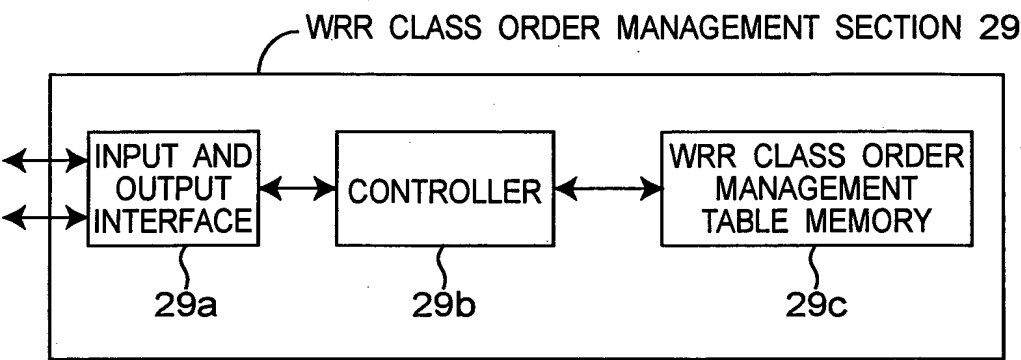


Fig.37

CLASS ID	NEXT SERVICE CLASS ID
0	1
1	0
2	-1
⋮	⋮
2 ^C -2	4

29c

Fig. 38A

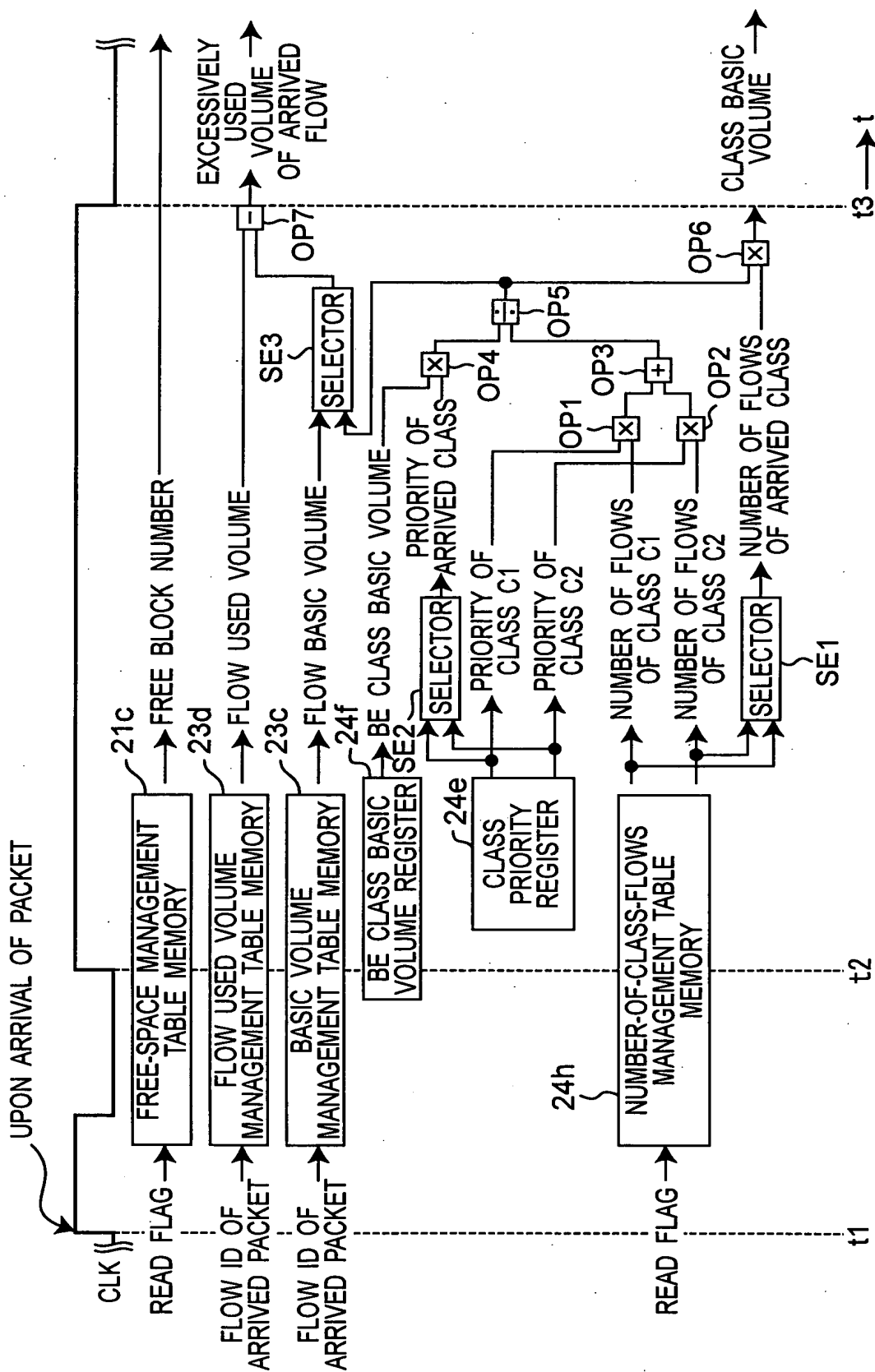


Fig. 38B

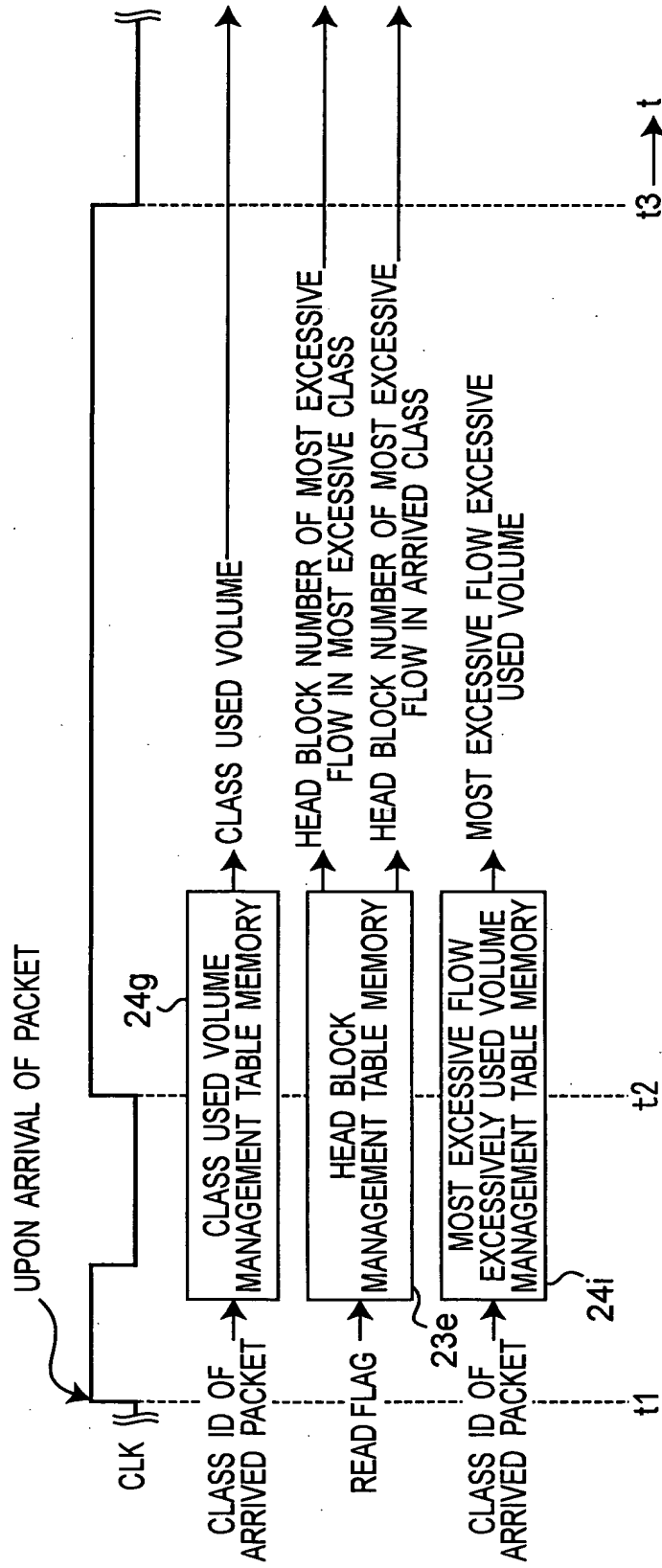


Fig. 39A

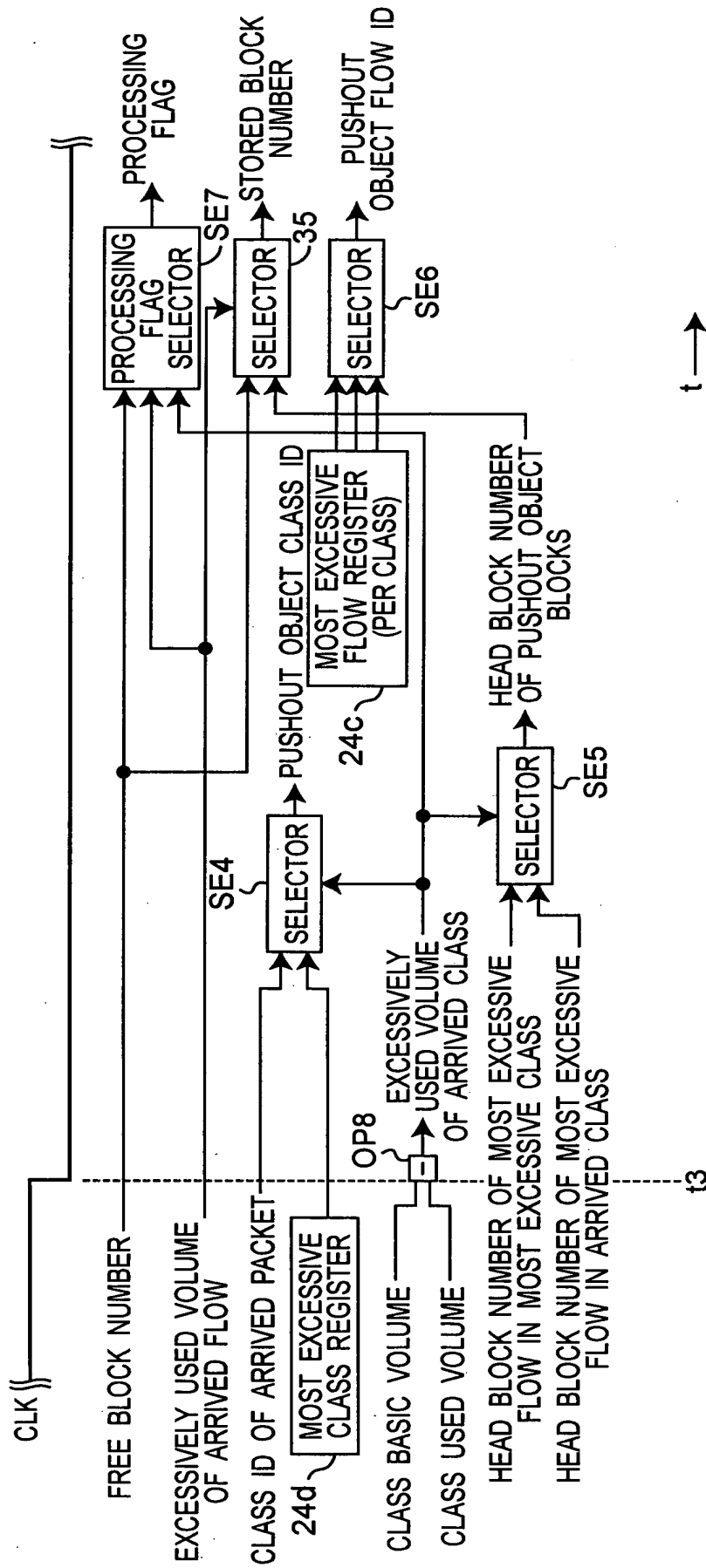


Fig. 39B

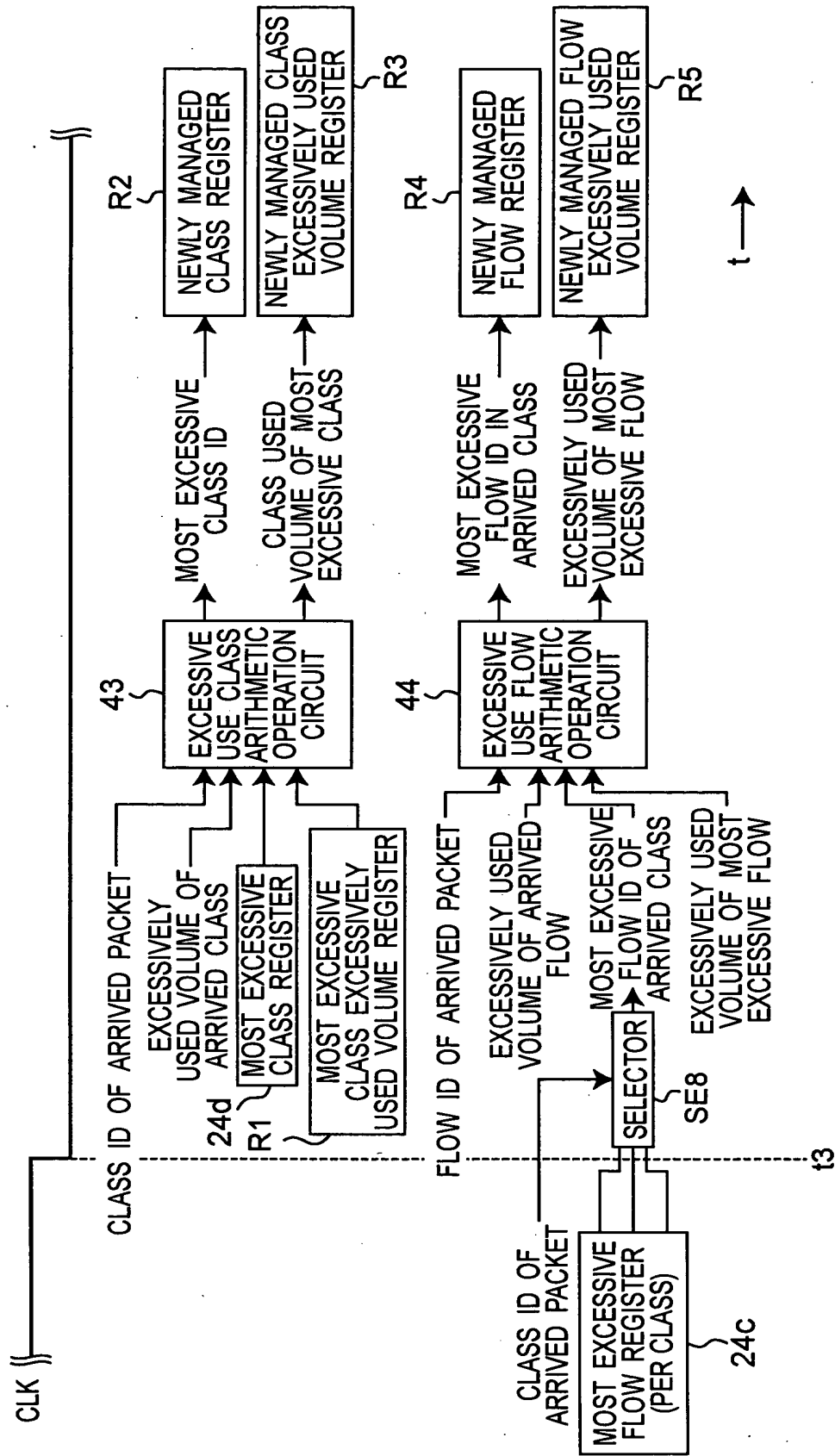


Fig. 40A

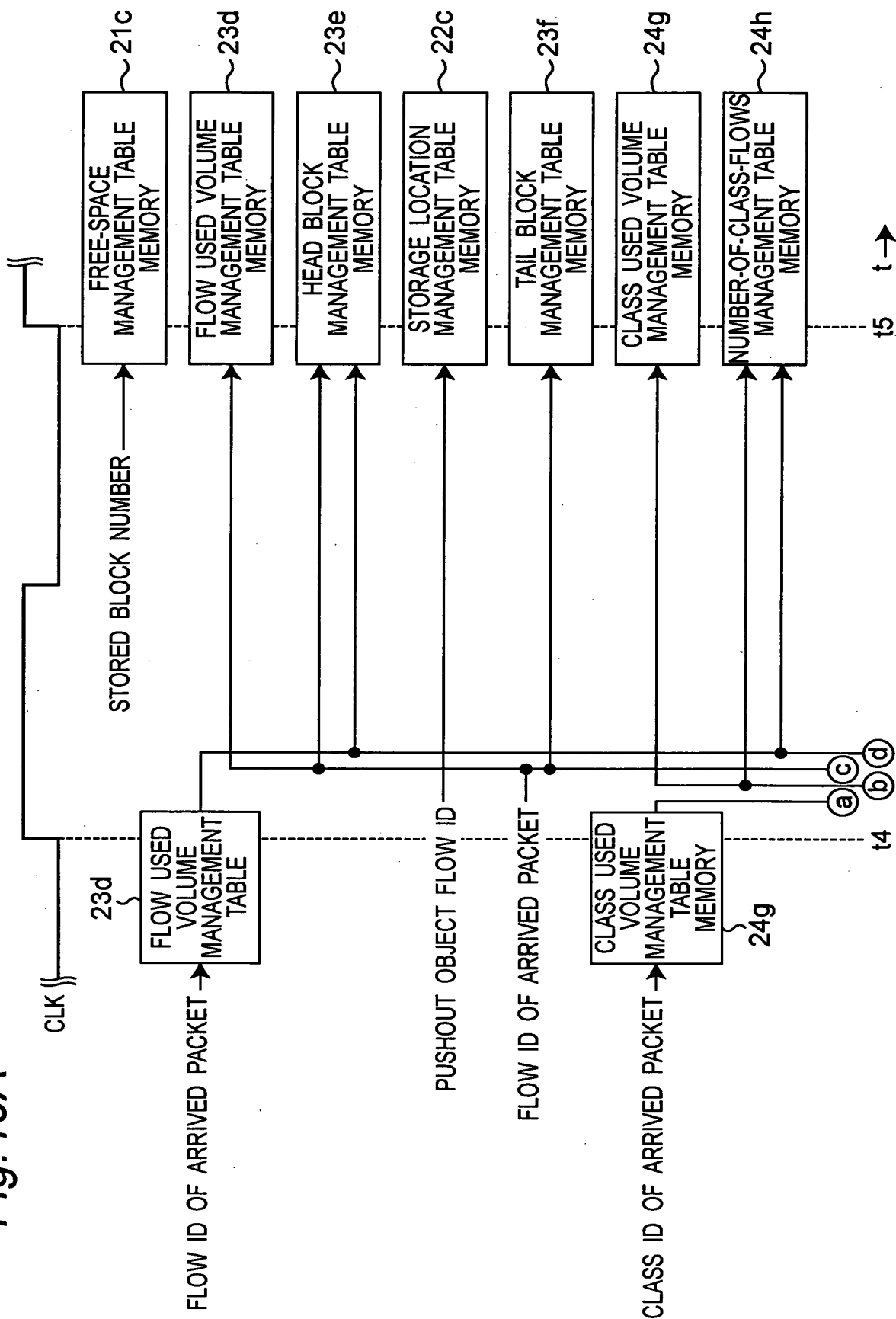


Fig. 40B

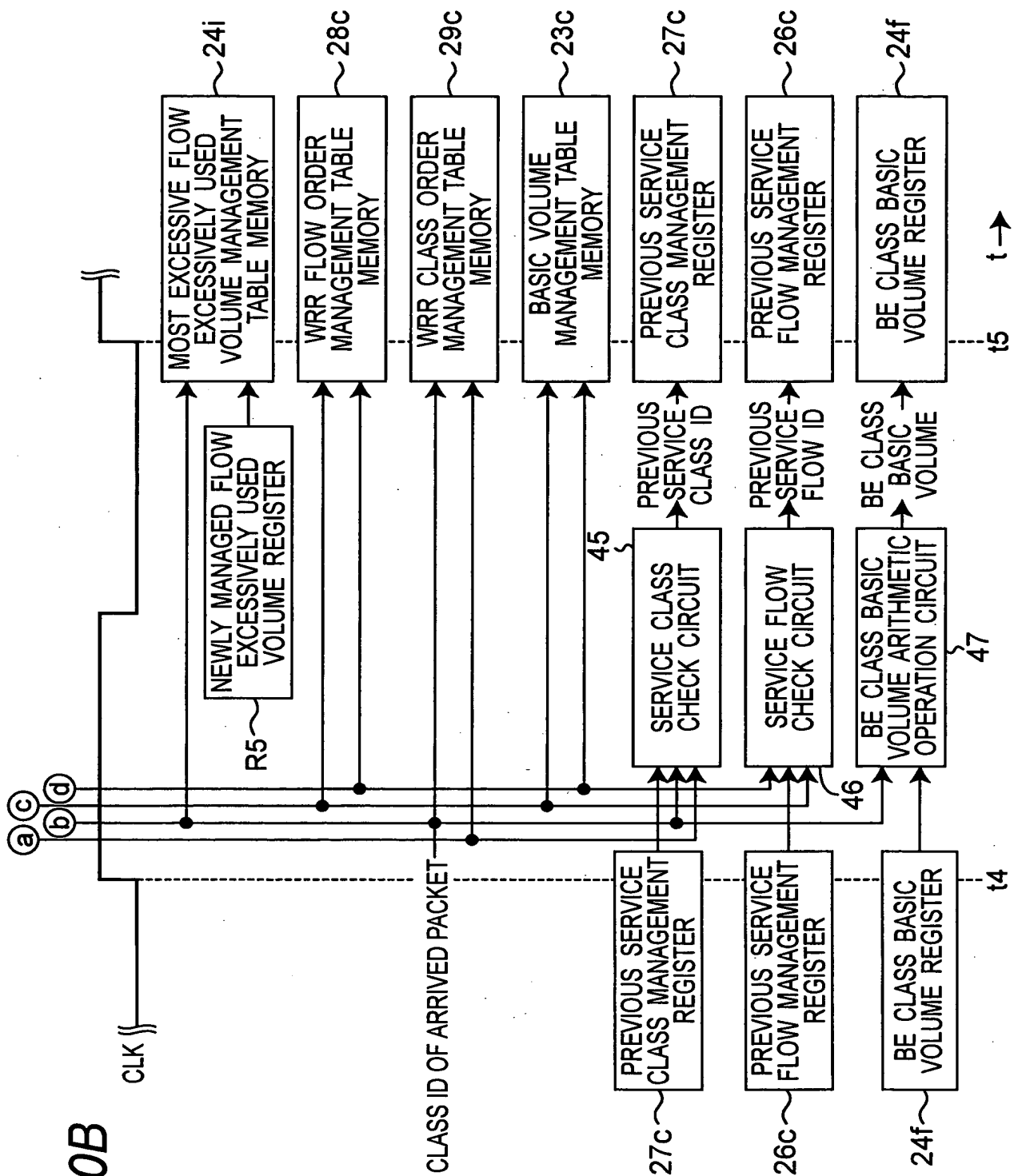


Fig. 41A

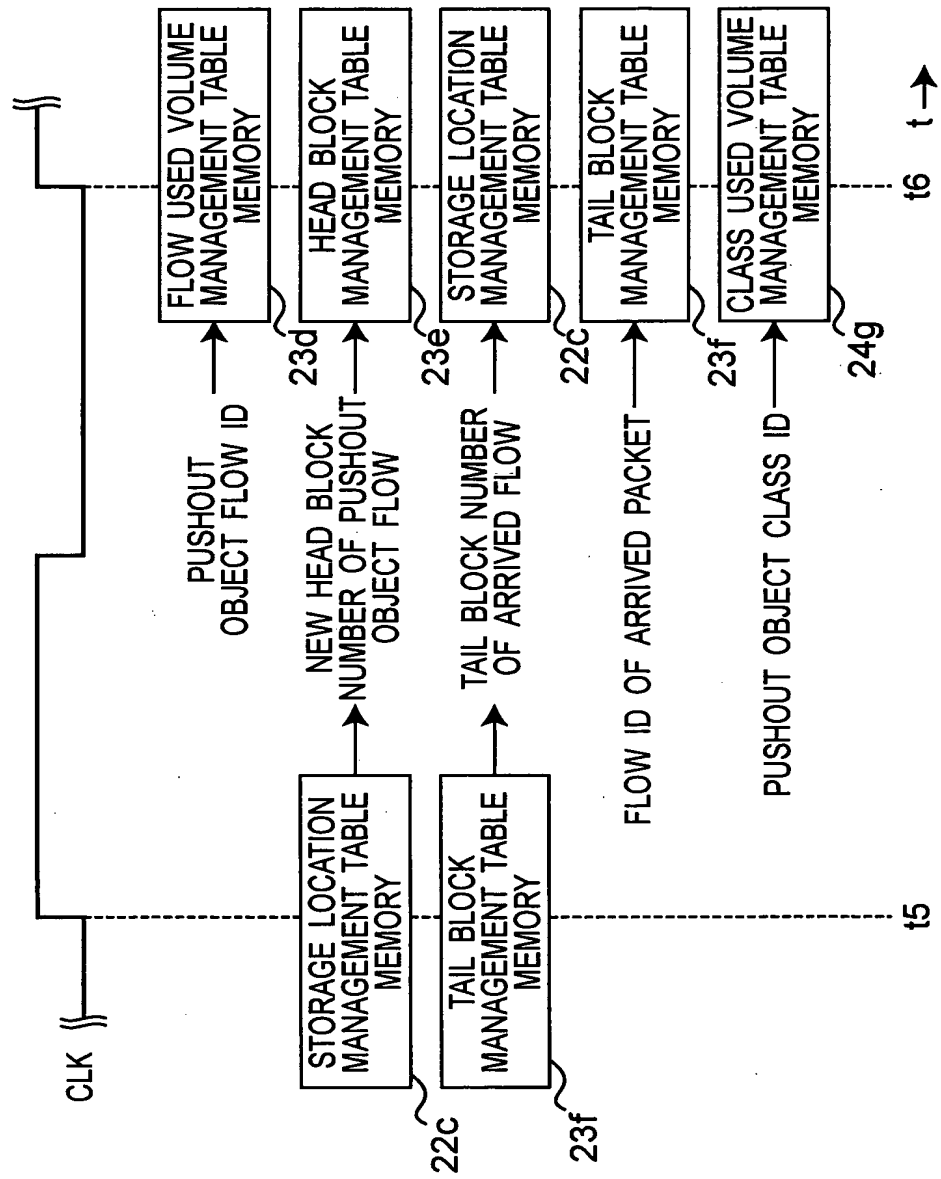


Fig. 41B

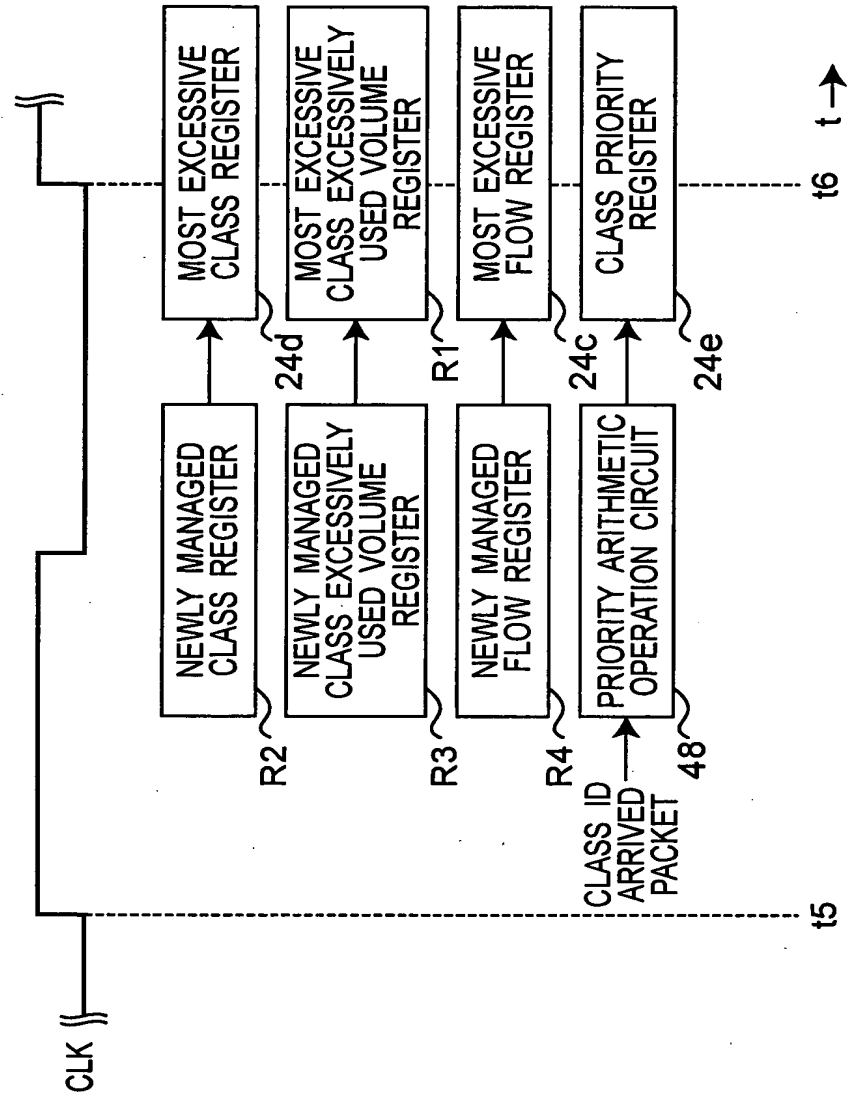


Fig.42

EXCESSIVELY USED VOLUME ARITHMETIC PROCESSING FOR
FLOW BELONGING TO BEST-EFFORT CLASS

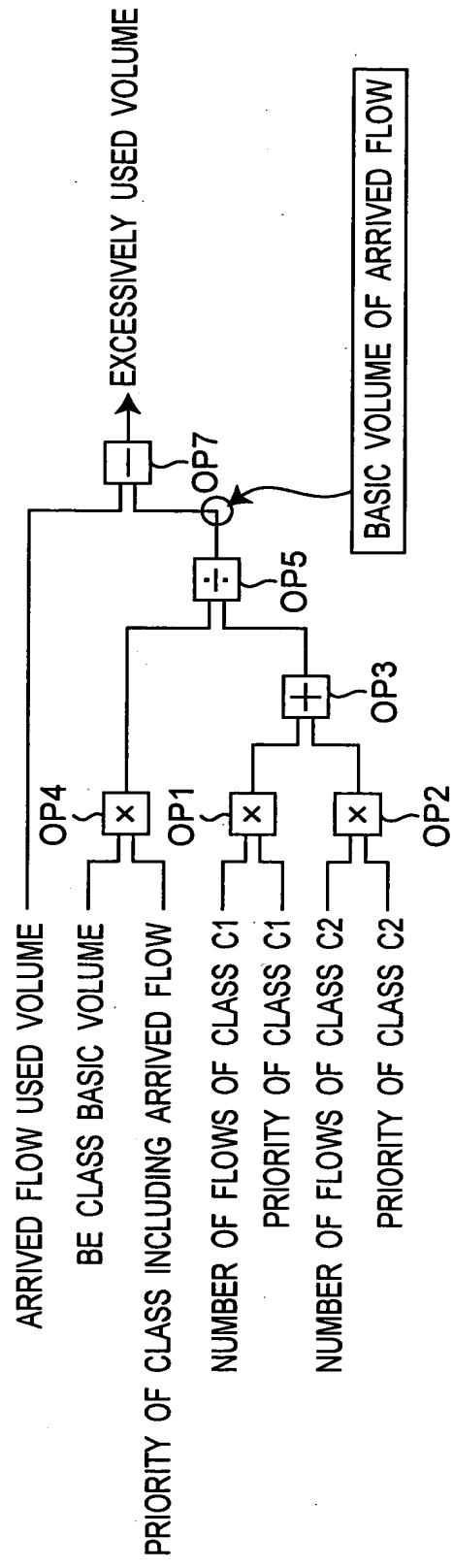


Fig. 43

EXCESSIVELY USED VOLUME ARITHMETIC PROCESSING FOR
FLOW BELONGING TO BANDWIDTH-GUARANTEED CLASS

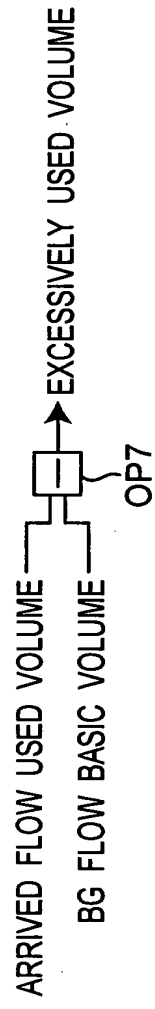


Fig.44

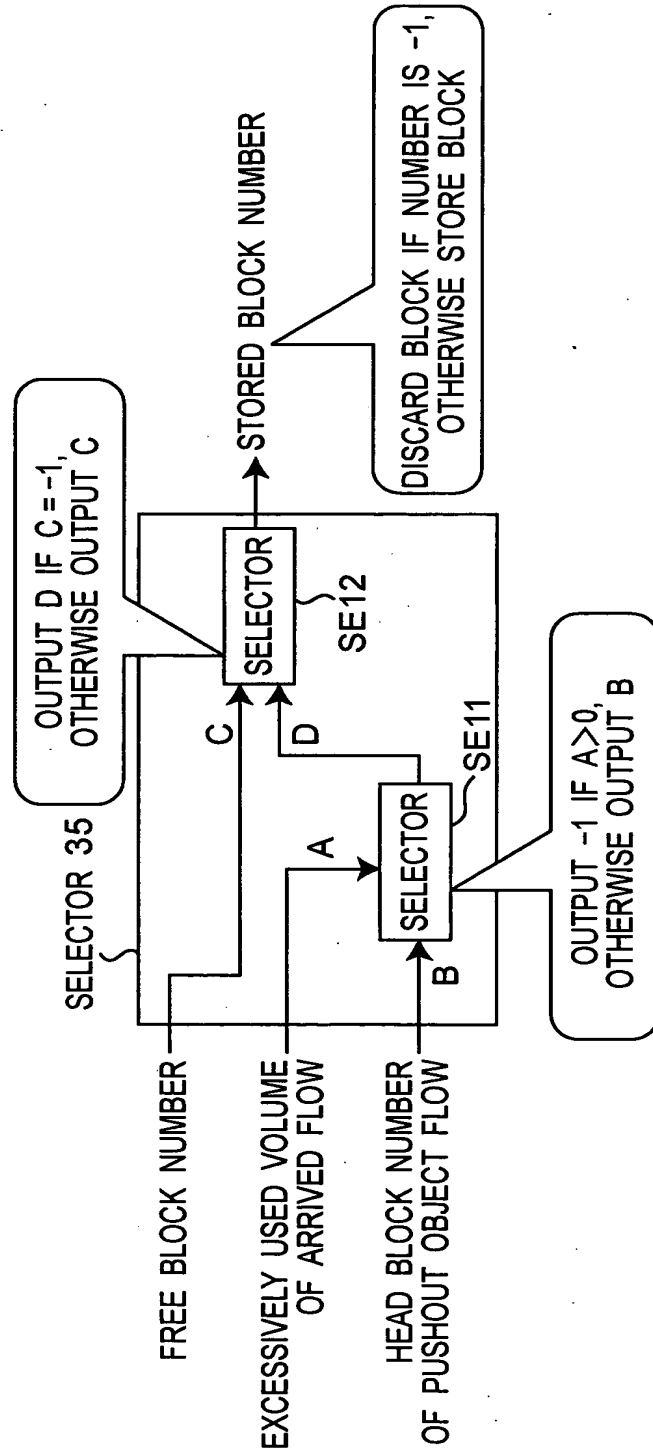


Fig.45

UPON TRANSMISSION OF PACKET

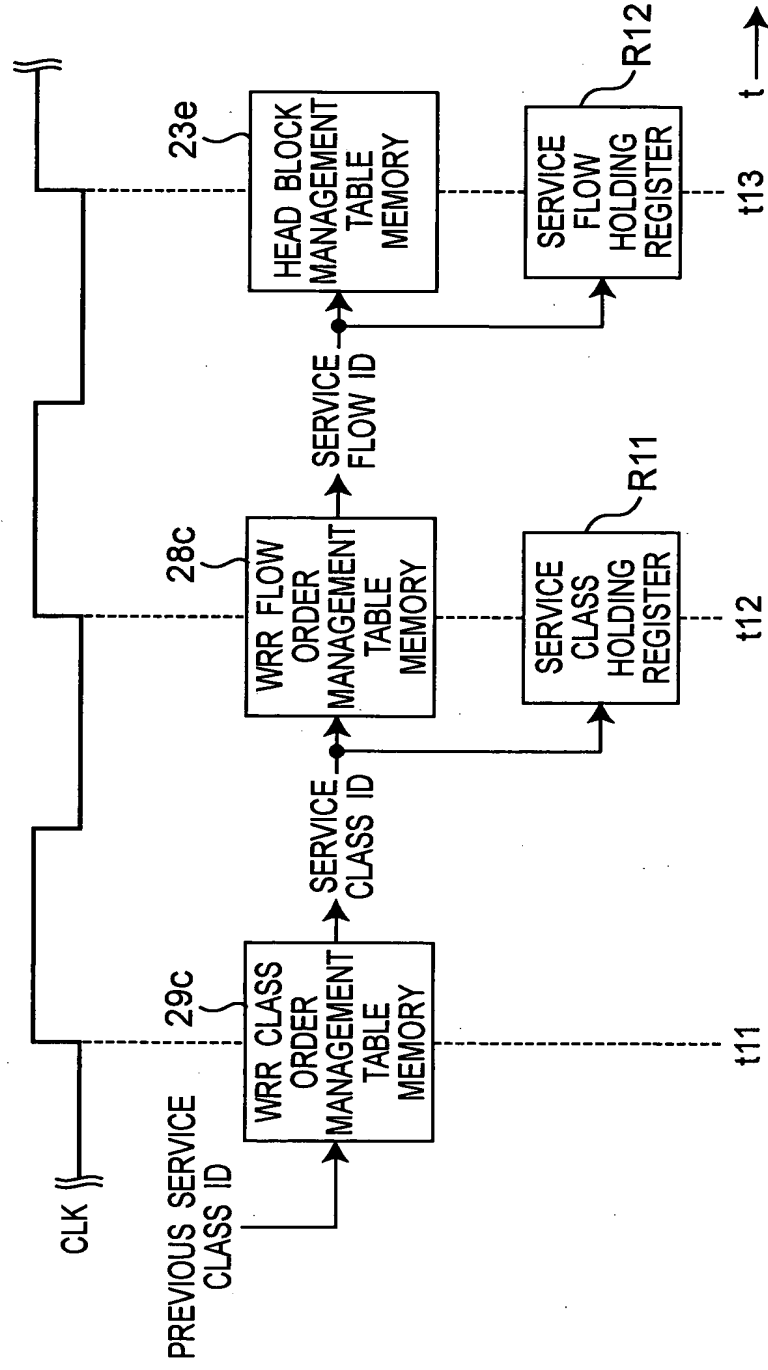


Fig. 46A

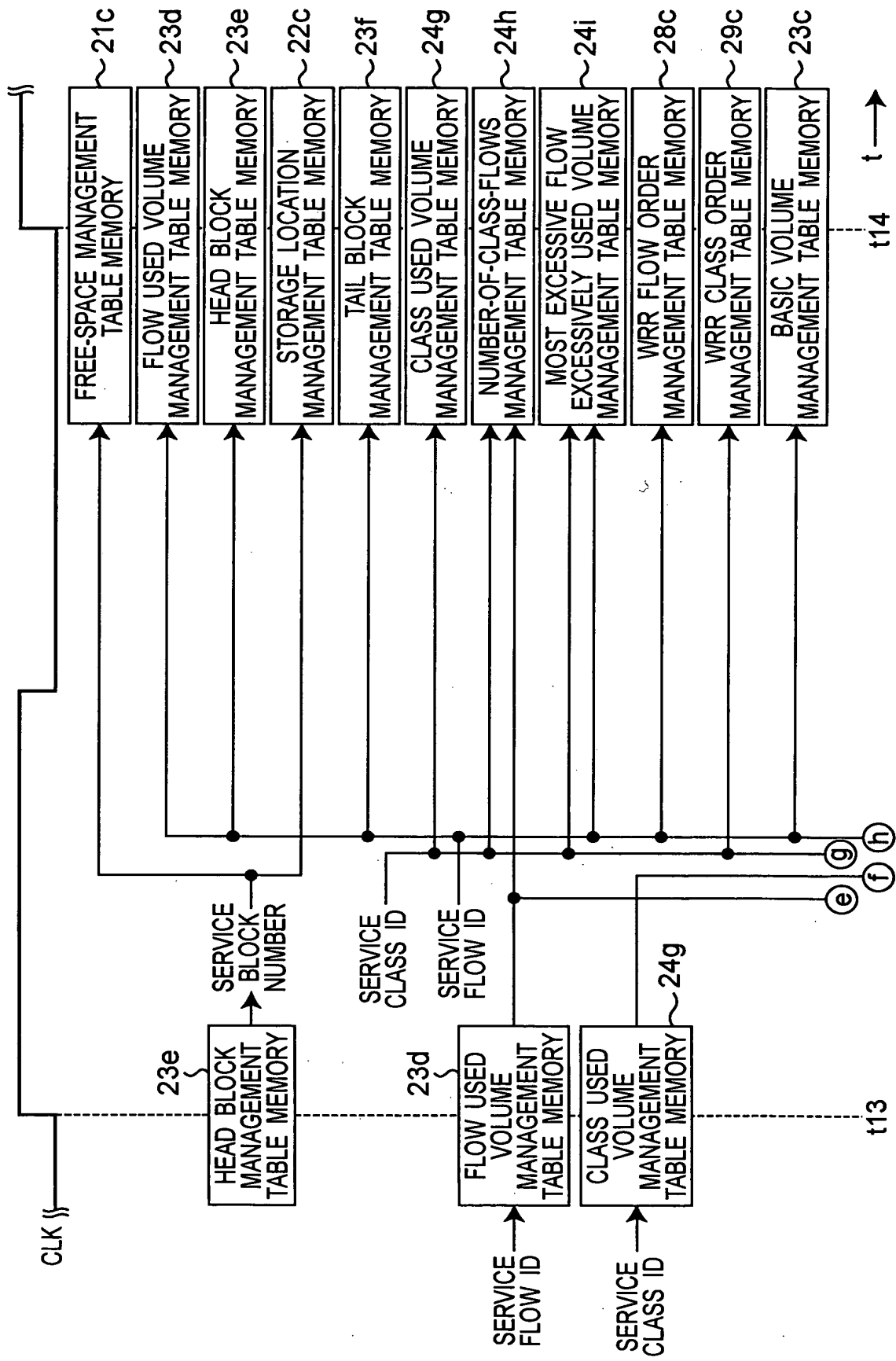


Fig. 46B

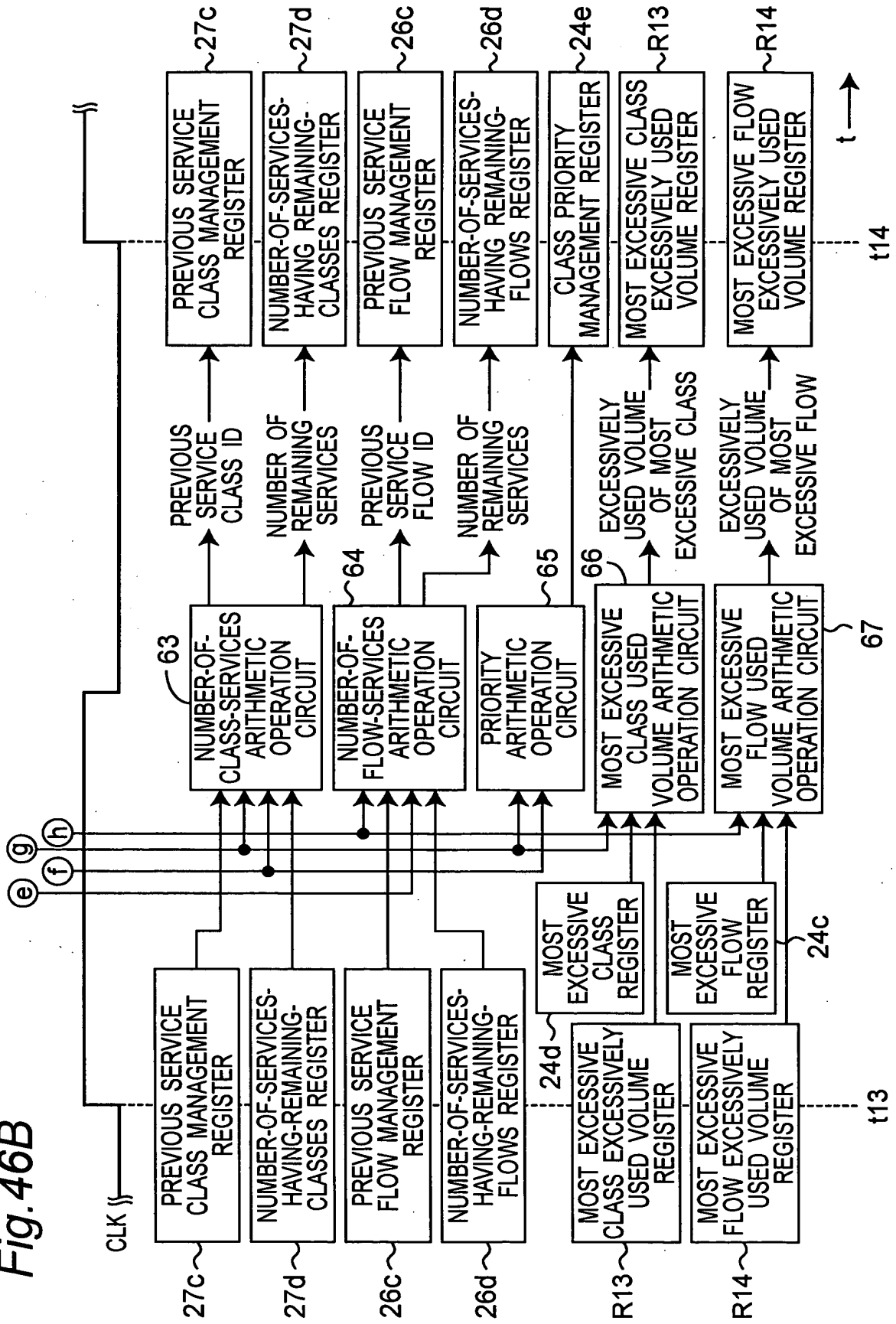


Fig.47 PRIOR ART

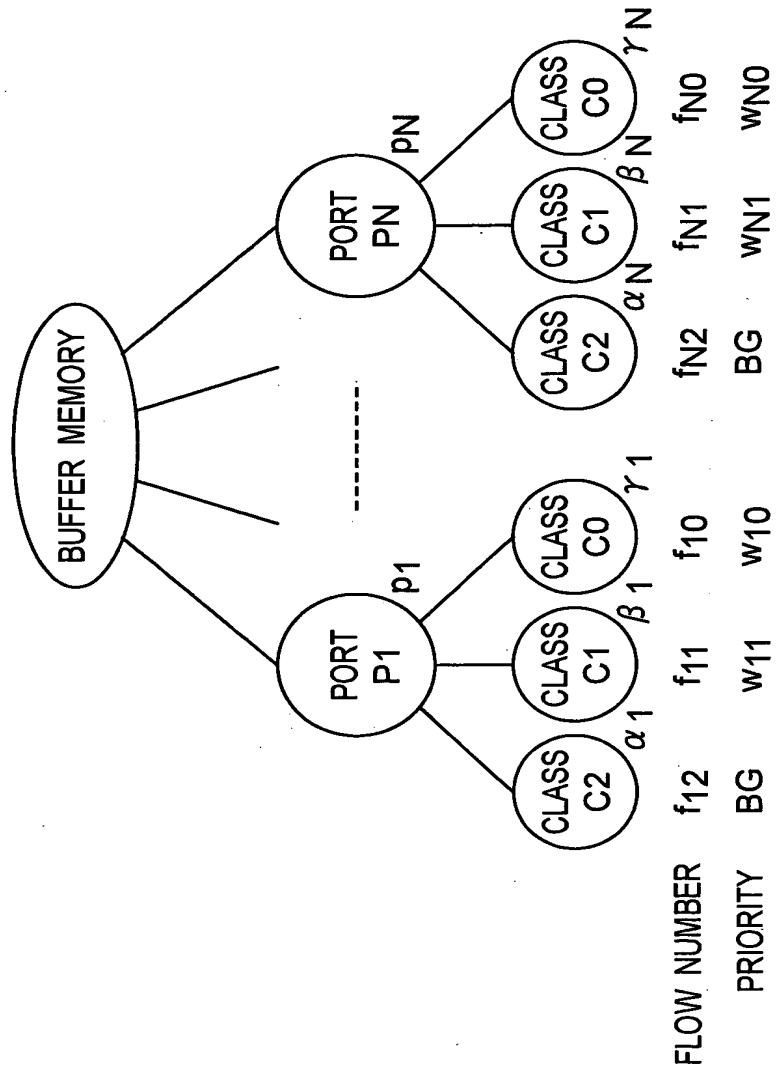


Fig.48A PRIOR ART

WHEN PORT P1 USES STORAGE AREA OF BUFFER MEMORY LARGER THAN BASIC VOLUME, CLASS C3 OF ARRIVED PACKET USES STORAGE AREA WITHIN BASIC VOLUME RANGE AND CLASS C2 OF ARRIVED PACKET USES STORAGE AREA LARGER THAN BASIC VOLUME

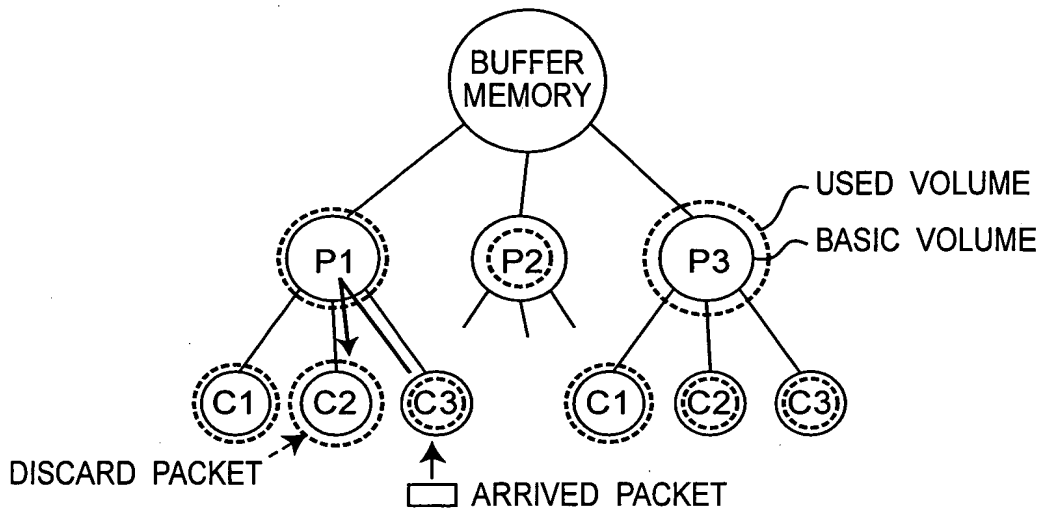


Fig.48B PRIOR ART

WHEN CLASS C3 OF ARRIVED PACKET AND PORT P1 USE STORAGE AREA OF BUFFER MEMORY WITHIN BASIC VOLUME RANGE, AND PORT P3 AND CLASS C1 OF PORT P3 USE STORAGE AREA LARGER THAN BASIC VOLUME

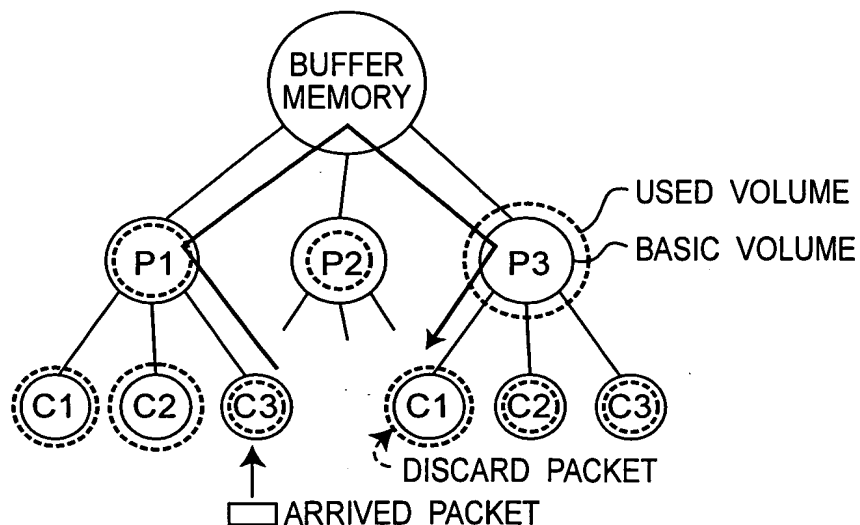


Fig.49 PRIOR ART

